The Milroy Lectures

ON

THE ETIOLOGY OF TYPHOID FEVER AND ITS PREVENTION.

Delivered at the Royal College of Physicians of London on Feb. 20th, 25th, and 27th, 1902,

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LECTURE III.[1]

Delivered on Feb. 27th, 1902.

MR. PRESIDENT AND GENTLEMEN,—Other foods have been proved to become occasionally the vehicles for the poison of typhoid fever.

In 1881, at the meeting of the British Medical Association at Cambridge, Sir Charles A. Cameron read a paper entitled "Sewage in Oysters," in which he pointed out that sewage which might perhaps contain the microbe of typhoid fever was sometimes present in oysters, and he had often found it in oysters taken from the shores of Dublin Bay.

In the Seventeenth Annual Report of the State Board of Health of the State of Connecticut, U.S.A., Professor H. W. Conn reported on an outbreak of typhoid fever at the Wesleyan University there. After excluding the drinking-water, the ice used in ice-water, the milk, the ice-creams, the meat, and the groceries, it was found that oysters obtained from the dealers at Middletown were the cause of the disease. These oysters were served at certain suppers at which were a number of persons who were not students of the college, among whom cases of typhoid fever also appeared at the same time as those in the college. For instance, of five Yale students who attended the banquet two developed typhoid fever. It was found that those only suffered who had eaten the oysters raw. One of the "fraternities" which had eaten the same oysters but had them cooked did not suffer from the disease. On examining the source of the oysters it was found "that at the rising tide an eddy was found to be setting along the shore from the region of the sewer outlet up stream in the direction of the oyster beds. This condition would plainly make it possible for typhoid contaminations from the sewer to be carried to the oysters." It was also found that two cases of typhoid fever occurred in a house discharging into the sewer in question at about the time that would be necessary to bring the possibility of infection to the date when the oysters sent to Middletown were collected. Experiments were made by Mr. Charles J. Foote of the Yale Medical School which showed "that the typhoid organism will live in the oysters long enough to have the oysters taken to Middletown and be eaten. In these experiments the bacilli typhi abdominalis were forced in between the shells of the oysters from the creek and were found alive and capable of growth at the end of 48 hours. This is all that is required to account for the outbreak at Middletown."

Professor Conn says: "If one had planned beforehand a series of experiments designed to prove the possibility of oysters as distributing typhoid it would hardly have been possible to have devised a more satisfactory series of conditions than those which had attained in this outbreak." The following is his own summary of "the chain of evidence which leads to the conviction of the oysters as the cause of the Wesleyan epidemic." "1. The dates of the cases appearing at Wesleyan, all between Oct. 20th and Nov. 9th, plainly point to a single source of infection to which all the afflicted students were exposed at about the same time. This must have occurred a little more than a week earlier than the appearance of the first case and the initiation suppers perfectly fill the conditions. 2. That these initiation suppers were the source of infection is rendered certain from the fact that four of the visitors who attended these banquets and have had no further connexion with the fraternities have developed typhoid simultaneously with the cases in college, and by the further fact that two visiting Yale students who attended the suppers have similarly suffered from typhoid. 3. The fact that only three out of seven fraternities holding suppers on that evening suffered from typhoid pointed to some article of food or drink used at these three suppers and not used in the other fraternities. 4. The fact that about 25 per cent. of the students attending the suppers have suffered from typhoid pointed to a universal and very active source of infection and not to an incidental one. Whatever article of food contained the infectious material must have been eaten by nearly everyone present to account for such a large percentage of cases. 5. Only one article of food or drink was used by the three societies which was not used equally by the other four fraternities. This article of food was oysters and they were eaten raw. 6. These oysters came from a creek, where they had been allowed to fatten for a day or more, within 300 feet of the outlet of a private sewer and in such a position as to make contamination from the sewer a possibility. At the time that the oysters were there deposited there were two persons in the house supplying the sewer who were in the incubation period of typhoid fever, the period during which no attention would be paid to their excreta. 7. Typhoid germs are not injured by sea-water or oyster juices, and if they found their way into the oyster would certainly have lived long enough to be sent to Middletown and be served on the tables of the fraternities. 8. Twenty-three cases of typhoid fever followed among the students in attendance on the suppers at which the oysters were eaten, and six cases among persons in attendance and not among the present students at Wesleyan. In all of the cases of undoubted typhoid it has been possible to trace either direct or indirect connexion with these oysters. The oysters were also eaten raw by one family in town and at least one severe case of typhoid followed. 9. The use of oysters from the same locality by the students at Amherst College produced, or all events was followed by, an outbreak of typhoid fever among the students who ate of them. These facts taken together form a chain of evidence practically complete at every point and leaving no room for doubt. Whatever may be said in regard to oysters in general the Wesleyan outbreak of typhoid was caused by a special lot of contaminated oysters." (Appendix to the twenty-fourth annual report of the medical officer of the Local Government Board, 1894–95.)

In "A Note on the Transmission of the Infection of Typhoid Fever by Oysters" Sir William H. Broadbent described several cases of typhoid fever occurring in houses with excellent sanitary arrangements, but traceable to oysters eaten from 10 to 14 days before the attacks. He also mentioned cases of city men who had eaten oysters at lunch suffering while their families were not attacked and he declared that "the evidence of communication of typhoid by this means has been of such a character as to produce a conviction in my mind" (*British Medical Journal*, Jan. 12th, 1895).

In a supplement in continuation of the report of the medical officer of the Local Government Board for 1894–95 is a very important report by Dr. H. T. Bulstrode on Oyster Culture in Relation to Disease. In this report accounts are given with diagrams of the layings, fattening beds, and storage ponds in various counties round the coast of England and Wales, from which it appears that those belonging to the larger and more important oyster companies are "in the main free from the risk of dangerous sewage pollution; and that, moreover, where security in this sense does not obtain it may, ... in not a few instances at least, ... be easily brought about by the simple expedient of altering the position of the fattening beds or storage pits." But, on the other hand, he showed "that there are cases where the risk of sewage pollution to oysters is so great and indefinable that nothing short of complete diversion of the sewers or drains or withdrawal of existing fattening pits or ponds from use can be regarded as satisfactory in the public interest."

In 1896 Dr. R. Bruce Low reported on an epidemic at Southend, Essex, in which he found that there was "some evidence of certain cases having been due to eating oysters which had been spread on 'layings,' or kept in boxes, along the foreshore, where they were liable to be contaminated with filth from the pier water-closets and by sewage from the sewer outfall."

[1] Lectures I. and II. were published in THE LANCET of March 22nd (p. 793) and April 5th (p. 942), and 12th (p. 1013), 1902.

In June, 1896, Dr. Chantemesse read a paper before the Académie de Médecine of Paris on Oysters and Typhoid Fever. In this paper he described an outbreak in the little town of Saint-André-de-Sangoins, in the Mediterranean department of Hérault, which was caused by a barrel of oysters from Cette, which were eaten raw by 40 persons, all of whom became ill, while in the six houses where the oysters were eaten those members of the family and domestics who had not eaten any were not attacked. Of the 40 persons attacked eight suffered slightly from abdominal pains, vomiting, diarrhœa, and general malaise; four others, the youngest, who had not eaten many, suffered severely from abdominal gurgling and pain with general malaise and great prostration. Two others, aged 20 and 21 years respectively, suffered severely from attacks of typhoid fever and one of them died. It was found that at Cette, where were the layings from which the oysters were brought, there was plenty of opportunity for them to be contaminated by sewage. Dr. Chantemesse collected from one of the chief merchants in Paris fresh oysters from different places as soon as they arrived in Paris and found that many of them contained the bacillus coli. He placed some of these, while living, in sea water intentionally mixed with typhoid excreta. After leaving them for 24 hours in this water he removed them and kept them for another 24 hours to represent the time they would take in being delivered to the consumers. After this time they were still living without any particular smell and were of good appearance. Nevertheless, bacteriological examination showed that they contained in their bodies and in the water round them not only the bacillus coli but the living typhoid bacillus.

In 1897 Dr. G. S. Buchanan reported on recent cases of typhoid fever at Brightlingsea and several urban and rural sanitary districts in Essex and Suffolk. There were 26 cases of which he says: "Each of these cases undoubtedly enteric fever, each ascertained to have been that of a person who had partaken of oysters at a date antecedent to illness consistent with occasion of oyster eating having been occasion of infection; in which no conditions, irrespective of oysters, to which infection could be attributed." He found that the oysters came from "layings" on a foreshore in Brightlingsea Creek conspicuously exposed to pollution by the sewage of Brightlingsea which is discharged untreated into the creek. He further ascertained that "at sundry different periods during 1897 infectious matters from enteric fever cases in Brightlingsea must needs have been discharged from Brightlingsea sewer outfalls."

I find from Mr. Shirley Murphy's annual report for 1897, as medical officer of health to the London County Council, that the following cases in various London districts were referred in that year to the eating of oysters or other shell-fish. The medical officer of health of Paddington reported that of the 45 cases (of typhoid fever) recorded during the year three appeared to have been due to the patients nursing other cases and two to eating oysters (origin unknown). In two cases there were histories of consumption of ice-cream and mussels, but the information was too unreliable to be accepted without reservation. At Fulham in the same year three cases were thought to have been due to the consumption of shell-fish. In Marylebone one case "pointed specifically to the consumption of contaminated oysters." In Stoke Newington five cases "were ascribed by the sufferers to the eating of oysters." In the Strand at least six of the 18 cases appeared to have arisen out of eating uncooked shell-fish, five of them at a seaside resort. At Holborn three out of the seven cases, which were contracted outside of the district, were probably due to the eating of oysters. There were two similar cases in Newington, one in St. Olave's, and three in Wandsworth. In one case at Plumstead "the patient had eaten whelks eight days before his attack." In 1898 one case in Westminster was attributed to oysters and another to "*contaminated cocoanut water.*" In the Strand "in two instances the disease is believed to have been acquired through eating shell-fish." In Wandsworth in three cases the disease was believed to have been contracted through eating oysters. In his report for 1899 Mr. Murphy gives the following summary under this heading: "In several reports it is stated that shell-fish had been eaten shortly before the beginning of illness; thus in one instance, in Paddington, cockles had been previously eaten at Southend. In Kensington, 'in several of the cases locally recorded, the sufferers had partaken of oysters, mussels, &c., at seaside resorts, within such periods of time antecedent to date of illness as to suggest a relationship of cause and effect.' In Fulham 'in five cases the origin of the disease was ascribed to shell-fish.' In Marylebone 'in several cases there appeared to be good evidence that the infection was taken in with such foods as oysters, mussels, or other shell-fish.' In Stoke Newington 'two cases doubtless contracted the disease outside London; the disease appeared to be due to the consumption of cockles in one case and to the consumption of oysters in another case.' In Holborn 'in three cases there was good evidence that shell-fish might have caused the disease.' In Newington 'in quite one-half of the cases notified within this period (middle of September to middle of November) the friends of the patients attributed the disease to the eating of shell-fish, presumably mussels. Certainly the eating of the mussels had taken place about eight or 10 days before the illness commenced or within the usual incubation period. The mussels were the Dutch variety.' In Lambeth in six cases there appears to have been a causal relationship between the attacks and the previous ingestion (within the incubation period) of infected shell-fish, in three cases oysters, in two cases mussels, and in one case cockles being the suspected medium. In Wandsworth parish in five cases 'the patients had partaken of shell-fish shortly before.' In Greenwich 'it was found that a great number of cases had partaken of various sorts of shell-fish, such as oysters, mussels, and cockles.' In Plumstead 'in two cases eating insufficiently-cooked mussels may have been the cause and in one case oysters.'"

The following cases were described in THE LANCET of March 3rd, 1900, p. 638: "Two servants, a footman and a maid-servant, employed at a country seat in Cornwall, were attacked by enteric fever soon after consuming certain oysters and the maid-servant succumbed to the malady. At the same house was a shooting party and two of the guests left on Nov. 11th after having during their stay eaten freely of oysters. These gentlemen were taken ill with enteric fever at their respective homes, the one on Nov. 24th and the other on Nov. 26th. Moreover, a lady guest left this house on Nov. 28th for Ireland, taking with her a supply of oysters, some of which she gave to her brother on her arrival. On Dec. 17th this brother developed enteric fever. All the oysters here in question were procured from the same source. ..... The suspected oysters were laid down in the Penryn river off the village of Flushing and opposite to the town of Falmouth"; into this river much sewage is discharged and Dr. Bulstrode considers the oyster-layings in it "as occupying a dangerous position."

In a preliminary report on "Cockles as Agents of Infectious Disease" Dr. Klein detected the bacillus coli in three out of eight cockles which had been taken from a foreshore polluted with the discharge from a sewer outfall and also the typical virulent bacillus enteritidis sporogenes in four of them, and in eight out of a dozen raw cockles in their shells bought from a street hawker "(1) no typical bacillus was found; (2) bacillus coli (typical) was found in five out of eight cockles; (3) virulent bacillus enteritidis sporogenes was found in four out of the eight cockles" (Report of the medical officer to the Local Government Board, 1899–1900).

In their report on enteric fever in Chichester in 1899 Dr. Theodore Thomson and Colonel Marsh say: "During May and June, when the fever prevalence was at its height in Chichester, there was considerable suspicion locally that the consumption of cockles, infected with the specific contagium of enteric fever, was responsible for the occurrence of no small number of cases of the disease. As result of careful inquiry it appeared probable that certain persons had actually contracted the fever in this way. Investigations on this subject were made locally in late July and early August, by which time nearly 70 cases of enteric fever had been reported to the local authority. As regards these cases it appeared that in 20 instances cockles had been partaken of within a month of the onset of illness; the remainder of the persons attacked by the fever had not partaken of cockles within that period. Of the 20 referred to 18 had eaten of cockles within three weeks of attack. In some instances, however, this relation in time between consumption of cockles and occurrence of the fever constituted the only apparent ground for attributing the latter to the former, but as regards 13 of these 20 persons probability of causal connexion was indicated by other evidence, such as nearly simultaneous onset of symptoms of the fever in two or more persons who had partaken together of cockles some 10 or 14 days previously, or the occurrence within 24 hours of consumption of cockles by several persons of sickness followed a week or two later by development of

enteric fever in one or more of the consumers. In most instances it proved impossible to ascertain whence these cockles had been derived; but, as noted in the body of the report, many cockles known to be obtained from mud-flats liable to pollution by sewage are sold in Chichester. The share of the fever, however, which can reasonably be referred to consumption of cockles is but small. The 13 cases referred to occurred in four houses, the remaining seven cases, regarding which evidence of causal connexion between the fever and consumption of cockles is less trustworthy, involved other four houses."

Cases of typhoid fever in Belfast have been said to be caused by eating cockles collected on the shores of estuaries contaminated by sewage (Otto Jaffé, THE LANCET, Feb. 10th, 1900, p. 421).

Instances of poisoning by means of uncooked mussels have been recorded since 1827 and a number of cases since that date are mentioned by Dr. Bulstrode in his report on oyster culture already referred to. It was formerly thought that this poisoning was due to copper from the docks or from ships' bottoms but this view is not supported by any satisfactory evidence. In 1891 Sir Charles Cameron investigated an outbreak of mussel-poisoning which he considered was due to disease of the livers of the molluscs but it appears much more likely that most, if not all, of the cases of poisoning by mussels are due to sewage pollution.

In Mr. Shirley Murphy's ninth annual report as medical officer of health of the London County Council is a report by Dr. W. H. Hamer on outbreaks of typhoid fever in St. George's, Southwark, Lambeth and Kensal Town in September, 1900. Dr. Hamer showed that the outbreaks were not due to water or to milk-supply or to defective drainage or to the use of a certain swimming-bath, to which the cases in Southwark had been attributed, or to ice-creams, or to any other foods with one curious exception. "The only article of food or drink emanating from one source which had been generally consumed by persons during the outbreak (in Southwark) was fried-fish. The circle of a quarter of a mile radius covering the area specially attacked had at its centre a fried-fish shop," and Dr. Hamer showed that "49 per cent., or just about half the families in the portions of the area in which a house-to-house inquiry was made, contained one or more members who ate fried-fish from that shop, and of the whole population of those two areas 48 per cent. did not eat fried-fish, 16 per cent ate fried-fish not obtained from the particular shop, and 42 per cent. ate fried-fish obtained from that shop." Similar inquiries produced somewhat similar results in Lambeth and in Kensal Town, and in both districts it was noticed that persons attacked by the disease obtained fried-fish from the particular shops, while other members of the household who escaped probably did not. The cause of the cases in Kensal Town was not so clearly traceable, but a number of those attacked purchased fish or shell-fish at a certain general fishmonger's shop. As Mr. Murphy says in his remarks on Dr. Hamer's report: "The question how fried-fish should be capable of conveying the infection of enteric fever is one to which no answer can at present be given. If due to surface contamination before cooking it is probable that this process would destroy the infection; if due to infection within the fish it is improbable that the fish would be sterilised thereby. These points could be determined only by experiment. With respect to the question generally as to how the fish acquired infective property Dr. Hamer found no reason for thinking that specific contamination occurred on the Southwark premises, and if both the Southwark and Lambeth outbreaks were due to the consumption of fish this fact would strongly mitigate against the view that such contamination had occurred in either of these districts, and points to some earlier period at which the fish became infected."

In his annual report for 1900 as medical officer of health of the London County Council Mr. Shirley Murphy mentions the following instances in which typhoid fever has been mentioned as caused by eating shell-fish in London during the year. "Dr. Sykes refers to an inquiry by him into a localised prevalence of enteric fever in St. Pancras, comprising 57 cases (of which a very few were in Hampstead) and occurring in November in a circle with a radius of three-quarters of a mile. He found that 'a large proportion of those falling ill gave a history of eating mussels from the same source.' Dr. Newman states that in five cases occurring in Clerkenwell 'the only traceable source was the eating of oysters and other shell-fish, procured in each case from a particular stall in a certain street.' Dr. Caldwell Smith states that in six cases in Wandsworth 'the patients had eaten shell-fish within the period of incubation of the disease,' and Dr. Millson, referring to special prevalence of enteric fever in Newington from the middle of September to the middle of November, reports that he came to the conclusion that the disease was due to some article of food and that shell-fish had been eaten by a large proportion of the persons affected. Dr. Kempster states that in a few cases in Battersea patients had consumed shell-fish but that it could not be proved that this had been the cause of the illness. Of cases occurring in Plumstead Dr. Davies writes that eleven cases had within a few weeks of the illness eaten shell-fish. Some of these were in the habit of frequently partaking of molluscs, while others had taken some just about two or three weeks before illness commenced. Five had taken celery shortly before the illness; one was a greengrocer boy and one was a gardener who visited Stratford Market daily. Three of the remaining patients were people of markedly dirty habits."

A report by Dr. Turner on an outbreak of enteric fever in south-east London drew attention to "ice-creams" as a possible means of typhoid infection. The occurrence of Italian names among the sufferers led Dr. Turner to ascertain the source from which the makers of ice or ice-creams obtained the milk used in their business. Later he found that 87 per cent. of the patients had eaten ices purchased of itinerant Italians. "The centre about Coldbath-street being fairly compact, it was decided to make a house-to-house inspection there for the purpose of ascertaining the number and ages of the inhabitants, the number of those who ate ices, where the ices were purchased, and whether the fever attacked those who consumed the ices sold by any particular vendor. Seven streets were selected for this purpose. These were adjoining streets, in some of which there were many cases, in some few, and in one there was no fever at all. The result of this inquiry may be summarised thus. The number of inhabitants at all ages in this area was 1551, of whom 627 persons lived in houses in which ices had been eaten and 924 lived in houses in which ices had not been eaten. Of the former (627), 61 had suffered from well-defined enteric fever or diarrhœa, while of the latter (924) who had not been in the habit of eating ices none suffered from such illnesses. The 627 persons in this area who lived in houses in which ices were eaten are divisible into two groups: (*a*) 232, the ices being obtained from shops; (*b*) 395, the ices being obtained from a particular ice-cream vendor whom I will call 'F' and who came from Mill-lane. Of the former (232) none were attacked, but the latter (395) included the whole of the 61 persons who suffered from this illness, and, furthermore, all the 61 persons had actually eaten ices purchased of 'F.' Cases of enteric fever were found to have occurred in at least one house occupied by these Italians before the general outbreak of enteric fever in these districts. In addition, the sanitary conditions of the premises occupied by these Italian ice vendors were very defective. The evidence that enteric fever was distributed by the vendors of ice-cream is therefore very strong. How the ices became specifically contaminated is not, however, very clear, though the possibilities of infection were sufficiently numerous." (*Journal of Public Health*, vol. iv., 1891-92.)

Other beverages besides water and milk have been sometimes proved to be the cause of outbreaks of typhoid fever. Thus a severe outbreak in the Stourbridge Rural Sanitary District (Staffordshire) was investigated and reported on by Dr. Parsons in 1888. It was in a limited area in the townships of Pensnett and Bromley. There was a special incidence of the disease and young adult males employed at ironworks and at other occupations involved especially to heat. The beverage commonly in use by such persons was ginger-beer, made often at home from the water of polluted wells and not wholly boiled.

Mr. Spear reported in 1890 that at Pemberton (Lancashire), where there was a smart epidemic of typhoid fever, almost confined to the village of Lamberhead Green, "the village under two separate systems of sewers, each of which embraced districts not affected by the epidemic. Water-supply in use, distributed over a much wider area. Method of excrement disposal (by privy middens) objectionable, but not serving to account for the sudden and widespread of fever outbreak; neither school attendance nor milk-supply implicated. On July 22nd, at the Variety Fair, most, if not all, of the early sufferers drank ginger-beer, and ate 'pease-pudding' that had been made in a room where a child was actually suffering from enteric fever."

Professor Gualdi, Chief of the Bureau of Hygiene in Rome, points out that the seasonal curve of typhoid fever corresponds closely to that indicating the quantities of raw vegetables sold throughout the different months of the year (THE LANCET, Nov. 24th, 1900, p. 1540).

An account is given of an outbreak *among paying patients* in the Insane Asylum, Northampton, Mass., U.S.A., which had before Sept. 9th, 1899, been singularly free from typhoid fever (only four cases in 10 years), but after that date had 40 cases in about two weeks. Dr. Morse of Massachusetts State Board of Health found that the *paying patients* had *celery* and that the *non-paying patients had not*, and that the celery was watered with filtered sewage; one of the farm servants, acting against orders, ate some of the celery and quickly contracted typhoid fever (THE LANCET, March 17th, 1900, p. 790, from the Springfield *Republican* of Dec. 14th, 1899).

Mr. Francis E. Atkinson, medical officer of health of the Silsden Urban Sanitary District, reported on an outbreak in February, 1891. There were 17 cases, *all children*; the cause was traced to two cases at an earlier date in the latter part of December, 1890. The excreta from these cases had been thrown into an ashpit. "On the 5th and again on the 12th of January a quantity of *decayed fruit*, grapes and oranges (chiefly grapes), had been deposited by a greengrocer upon the same ashpit where the original typhoid excreta had been placed. This fruit was discovered by the children, who were all associated as playmates, and distributed and eaten to a greater or less extent by all of them" (*Public Health*, vol. iii., 1890-91).

In 1871 I was called on to inspect the house at which His Majesty (then Prince of Wales) was supposed to have contracted typhoid fever and I reported the results of my investigations in a letter which appeared in the *Times* of Jan. 22nd, 1872, in which I showed that although there were certain sanitary defects in the house in question there were no such defects as had been previously described. For instance, it had been said that the water-closet in their Royal Highnesses' suite of apartments was directly connected with a cesspool underneath and that its soil-pipe was not ventilated. Neither of these statements was true; there was no cesspool under the water-closet at all, nor, indeed, anywhere on the premises, and the soil-pipe was fully ventilated. There was, in fact, nothing the matter with that water-closet and it is certain that His Royal Highness did not get his attack of fever from any foul air in it. There was, however, a defect in another of the water-closets in the house and I was unable to say positively that the disease had not been contracted there. On looking carefully through my notes, made 30 years ago, I have come to the conclusion that although we proved that the outbreak was not caused by water or by milk it was in all probability caused by some other food (such as oysters or salad) which was partaken of by His Royal Highness, the other gentlemen of the party, and some of the men-servants (perhaps at a shooting luncheon), but not by Her Royal Highness the Princess of Wales or by any of the ladies or female servants; all the other cases were among the gentlemen of the party and the men-servants. Had the outbreak of fever been caused by the insanitary condition of the premises it would certainly have attacked some of those who were most in the house, whereas, as a matter of fact, it attacked those who were most out of doors and some of whom did not sleep in the house at all.

Many outbreaks of typhoid fever have been traced to direct infection from *sewer air* passing into houses. Among such are the following. In a remarkable report published in the Ninth Report of the Medical Officer of the Privy Council Dr. George Buchanan showed that the only towns in which the mortality from typhoid fever had but slightly diminished or had even increased after improvement in water-supply and sewerage had been carried out were those in which means of escape for the sewer air were not provided, so that it forced its way into the houses. In another report by Dr. Buchanan on enteric fever at Croydon he says: "In the course of my inquiry I examined a large number of houses—of course, not a large proportion of the whole, but in a variety of respects typical of the whole—including many where there had been no fever, as well as those where there had been fever, among the latter a probably large proportion where the circumstances of fever production had been most obscure; *and I satisfied myself that in a very considerable majority of the Croydon houses that have had fever drain air charged with infection from the commonest sewers of the town had had the opportunity of entering the houses.* Oftentimes in a group of houses resembling each other in their general sanitary arrangements some particular drain defect was discoverable in certain houses but not in others; and as often it was found that the incidence of the fever had been upon those which showed that drain defect and not upon the houses which did not show it. I quote from among other instances two examples of such differentiation. They were cases of a less common kind, where the relation of the fever to the particular defect had not been at once obvious. 1. There had been fever at some houses in St. Peter's-street with no inside drains whatever, with outside water-closets and disconnected scullery sinks. The first seven of them were visited and it was found that the drain just outside the house was at four of them practically untrapped, but was efficiently trapped at the other three. In none of the latter had there been fever, but this disease was present last year in three out of the four former. 2. Howard and Birchanger roads, South Norwood, were visited because of a different prevalence of fever in the two. 13 houses in the former road, including seven that had had fever, were examined, and eight houses in the latter, including one of two that had had fever. Few of the houses were found with their drainage arrangements conforming in all respects to the standard, but one particular defect characterised the great majority of those where there had been fever. This was an overflow pipe going direct into the sewer from a cistern that was usually placed in a very confined situation under a bedroom floor. In the Howard-road this arrangement was seen in eight houses, the cistern furnishing more or less of the drinking-water in the case of seven of them and in six out of these seven there had been fever. It was not seen in the five other houses, only one of which (having a stinking water-closet) had had fever. In the Birchanger-road this particular defect was witnessed in two houses only out of the eight visited and one of the two had had a case of fever; the houses where there was no such arrangement had escaped. (Facts as to the second fever house were not obtainable.) Other ways less direct than the foregoing by which excremental products bearing with them the contagium of enteric fever have produced the disease will immediately come under review. But there can, I think, be no doubt that the chief way in which enteric fever spread last year in Croydon was the most direct and commonplace way of all—viz., by the escape of infected air from the sewers and its inhalation by persons susceptible of the disease."

And he adds the following very definite and very important statement: "The great intensity and simultaneousness of the fever epidemic over Croydon should be no hindrance to the acceptance of this view. Where sewers are small and ill-ventilated they constitute perfectly sufficient means for the rapid distribution of fever infection, and places having such sewers may not only show fever-rates maintained as high as before the sewers were made but they may show as smart outbursts of fever as are witnessed where conveyance through water or milk is in question. Croydon itself after it had made its sewers and before it attempted to ventilate them had this experience. So in other instances that have come under my personal knowledge fever has maintained itself after pipe-sewers, ill-ventilated, had been laid, as in Rugby, Carlisle, in Chelmsford, in Penzance, in Worthing, in the last two places breaking out in severe, sudden, and diffused epidemics without there being any question of other distribution than by sewers. And my personal experience is confirmed by that of others. Towns with larger sewers have not appeared to have had the same suddenness of outbreak when spread by means of sewer air has been in question. In them the evil influence of sewer infection is more gradually manifested, as might be expected from the different physical circumstances of the two kinds of sewers."

"While I admit for the most part the sewers of Croydon are well adapted for the removal of liquids and solids, they appear to me to be adapted, when infected by fever excrement, to facilitate the passage of infection into the vicinity of houses. The air of the sewers is, as it were, 'laid on' to houses. It is arranged that every house drain and every house soil-pipe shall contain, up to the very wall of the house and up to the very trap of the water-closet, the common air of the Croydon sewers, not simply charged with impurities it may receive from the particular house but charged also with any dangerous quality that it may have brought from other houses; for hardly anywhere in Croydon can there be found an arrangement for severing the sewer air from the air of the house-drain. So that wherever drain air has entered a house, no matter by how inconspicuous a defect and no matter

whether it has given rise to stink or not, it has been the air of the common sewer, and this was throughout 1875 charged to an intense degree with the infection of enteric fever."

After showing that there was "no ground for suspecting that milk has played any part in the epidemic" he gives a number of instances to prove that there were many local contaminations in parts of the water service and continues: "The evidence here adduced respecting the entry of foreign matters into Croydon water-pipes is independent of any view that may be taken as to the mechanism of their entry. Of this mechanism it is difficult for me to speak with any confidence, inasmuch as, even to engineers, the physical conditions of the passage of liquids along tubes are not universally known. It is clear that at Croydon there are some very awkward relations between sewers and drains on the one hand and water pipes on the other. First, the valves through which the sewers are flushed are direct openings from water mains closed by a diaphragm that is liable to leak, and through which it is, to say the least, conceivable that matters may pass from the sewer into the water-pipe on occasions when the water-service intermits. Secondly, the branch mains in particular streets and still more often the service-pipe of particular houses, sometimes lie in the same trench with sewers or house drains; and it is suspected that in places both may be leaking. Thirdly, hundreds of water-closets are served direct from water mains by mere taps on the service-pipes without any interposition of cistern or other safeguard. During times of full water pressure in the pipes these communications may not be hazardous, though as pressure may be taken off a water-pipe by making an opening at the further end of the pipe even more efficiently than by a partial closing of the calibre of the pipe, and as the object of these pipes is to have their further ends opened there is little safety in this consideration. It is no doubt mainly at times of intermission of water service that there arise the physical conditions under which suction of matters from without may take place into the water-pipes, but I have no reason to believe that such accident can take place only at those times." But he finally concludes "that water pollution played a much less considerable part than was played by infection delivered from the sewers directly into the air of houses." (Report of the medical officer of the Privy Council and Local Government Board, New Series, No. VII., for 1875.)

Dr. F. R. Blaxall reported that in Truro in 1874 an outbreak was caused by "entrance of foul air from the sewers into houses."

The prevalence of typhoid fever in the city of York in 1884 was attributed by Dr. H. Airy to sewer air for the following reasons, which I quote verbatim. "The hypothesis that the fever outbreak was caused by sewer exhalations appears to explain the partial distribution of the disease, for the cases in the Micklegate district were almost entirely confined to the area of the Mount sewer, and those on the other side of the river were mainly confined to the Waringate district—that is to the rear of the Foss sewers. Moreover, the comparative isolation of the Hungate group agrees with the fact that Hungate forms a distinct subarea of the Foss sewer district. The greater prevalence of the fever in the Micklegate district towards the mouth of the Mount sewer may conceivably be explained by the early occurrence (in February, May, July, and August) of a number of typhoid cases, one of which, imported from Edinburgh, probably introduced new blood (so to speak) into the strain of infection in that line of sewer. The simultaneous infection in Clementhorpe and Layerthorpe in August admits of explanation, I think, only by the state of the sewers, connected as they are below by the river which receives their outfalls, above by the atmosphere with its seasonal vicissitudes." After considering the suggestion that the fever was spread by a pollution of the ground air and dismissing it because the polluted soil was not in any way specially characteristic of the dwellings in which fever appeared he says: "In conclusion, though under these complicated conditions there is much room for doubt, I am disposed to refer the recent prevalence of typhoid fever in York to exhalations from the ill-ventilated sewers under the influence of an exceptionally dry and warm season."

In 1883 Dr. Blaxall reported on an epidemic of typhoid fever in the Urban Sanitary District of Melton Mowbray in connexion with the sanitary condition of that town. He gives a table showing the incidence of the fever on various streets and adds: "It will be observed from this table that on three or four occasions there was a simultaneous appearance of cases in several streets, indicating some cause in special operation over an extended area. Thus it soon became possible to exclude, as being primarily concerned, two of the ordinary means of fever propagation—viz., polluted wells and unwholesome privies, the injurious effects of these being limited to persons living in their immediate vicinity or otherwise exposed to their circumscribed operation. In the Melton Mowbray epidemic the invaded families resided in various parts of the town, getting their water from different wells and frequenting different privies. Again, there was no community with regard to milk, some of the infected families not drinking milk at all, others getting it from various sources. On the other hand, the circumstances of the outbreak *reflect grave suspicion upon sewer air as having been mainly concerned in the spread of the disease.* It was found that the several streets which experienced the chief incidence of attacks occupy a portion of the town traversed by one particular line of sewers, and with this line of sewers were connected the houses in which the initial cases occurred and from which, as already explained, the sewer had certainly become contaminated with the specific material of the fever. This suspicion receives confirmation from the fact that all the individuals attacked were found to have been peculiarly exposed to the influence of air escaping from drain inlets or closets. Thus, excluding the initial cases, 23 out of the 36 families had untrapped drain-inlets close to their dwellings, nine had imperfectly trapped inlets which were so offensive that the people used to throw chloride of lime down the drains to stop the stink. Besides this home exposure to the injurious effects of sewer-air the opportunity of similar danger incurred at schools cannot in the case of 14 children be entirely overlooked. Hence it is apparent that out of 36 infected families 32 were exposed to the influence of sewer-air through the medium of untrapped inlets to drains. The remaining four had closets situated out of doors but unprovided with means for flushing—an arrangement conducing to the escape of sewer-air into the closets owing to the traps not being kept duly filled with water. Moreover, the traps of the drains from these houses (like the other 32) were more or less defective" (Twelfth annual report of the medical officer to the Local Government Board, 1882–83).

The following interesting account is given in *Public Health*, vol. i., p. 319, of an outbreak of typhoid fever produced by sewer air on H.M.S. *Monarch* and described in the Medical Statistical Returns of the Health of the Navy for 1887: "There were four cases in all; three of these appeared to have been undoubtedly attributable to the berth alongside the New Mole at Gibraltar which was occupied by the *Monarch* in January—a situation to which sanitary objections have often been raised. The observations of the medical officer (Fleet-Surgeon Maxwell Rodgers, M.D.) are as follows: 'The *Monarch* arrived at Gibraltar from Lisbon on Jan. 18th and was moored alongside the New Mole at a point nearest the dockyard, where she remained till Jan. 24th, when she left for Port Mahon. Near the south corner of the dockyard and but a short distance from where the ship was moored one of the main sewers of the town empties itself into the sea. During the stay of the *Monarch* at the New Mole a strong wind, which increased to a gale on Jan. 21st, blew in a direction from the opening of the sewer in question towards the ship. A most offensive and sickening smell was complained of by those on board, so much so that some of the officers were obliged to shut their cabin ports in consequence. I am informed that frequent complaints have been made for years past of the insanitary condition of this part of the harbour and that cases of fever have from time to time occurred on board ships moored there and I have no doubt that the noxious emanations from the sewer referred to are quite sufficient to account for the three cases of enteric fever which occurred. Condensed water had been used for drinking and cooking purposes.' The first case occurred on Jan. 22nd, the second on the 29th, and the third on Feb. 6th; this last case was in the person of a young officer who died in the military hospital at Gibraltar. The fourth case occurred at Lisbon in April; the patient, an officer, had visited Oporto. Fleet-Surgeon W. D. Wodsworth, the medical officer of the *Minotaur*, also ascribes two out of the four cases that occurred in that ship to the influence of the same sewer at Gibraltar. He adds that 'its mouth had been damaged so that it was uncovered at low water,' and that he has since heard that 'later in the year [this was in May] some cases of fever occurred among the men of the Rifles who on

alternate days supply the Mole guard and were subject to similar conditions, so much so that the guard was discontinued for some time and the drain was mended.' Two men of the *Minotaur* were invalided for the disease." For another case of spread of the disease by sewer air see note on Dr. Wheaton's report on Mold, under heading, "Ground and Ground Water."

Dr. Ballard reported in 1875 on enteric fever at the West Riding House of Correction. He says: "Interior of prison polluted by sewer air in consequence of faulty construction of sewers and drains. Infection probably spread by the use of infected earth supplied to earth-closets."

In the seventh report of the medical officer of the Local Government Board for 1877 is an abstract of a report by Dr. Blaxall on an epidemic of typhoid fever at Padstow in Cornwall, "associated with specifically infected sewer air" —"sewers very insufficiently ventilated and unprovided with means for flushing."

An outbreak of 35 cases of typhoid fever occurring at the Foundling Hospital from Oct. 6th to Dec. 14th, 1891, was investigated by Dr. J. F. J. Sykes, medical officer of health of St. Pancras. He found that fæcal matter from a soil-drain was washed back by the discharge of a flush-tank into a grease-trap into which a discharge pipe from cooking coppers also discharged above the water level, so that the grease-trap acted as an incubator and infected air from it got access to the coppers and to the kitchens; hence the girls employed in the kitchens were mostly attacked—33 girls, two boys. (Special Report and *Public Health*, vol. iv.) I may mention in this connexion that while investigating the causes of an outbreak of cases of diarrhœa and sore-throat at the Hospital for the Paralysed and Epileptic I found that the steam escape-pipes from the cooking ovens were connected with a pipe which joined the ventilating-pipe of a soil-pipe, which also acted as ventilator at the head of one of the main drains, so that when the ovens were cooling foul air from the drains was drawn into them and so into the kitchens.

As instances connected with the washing of clothes I may cite the following. In November, 1900, Dr. R. W. Johnstone, in a report upon an outbreak in Nuneaton and Chilvers Coton Urban District, says: "One case was traced with a good measure of probability to infection derived from the washing of clothes soiled by a fever patient."

At University College Hospital in 1900 an outbreak of typhoid fever occurred among the nurses. I found that it was due to their having been supplied, during the alterations occasioned by the rebuilding of the hospital, with water from a tap which had been newly fixed over a sink in the pantry of their temporary dining-room, this tap having been connected by the plumber with the nearest water-pipe, which happened to be one from a cistern in the water-closet of a ground-floor ward supplying the taps over the vats in which the typhoid linen was placed before being disinfected and washed. When the cistern in question was emptied and cleaned the taps were left open and the typhoid poison obtained access to the pipes and cistern and contaminated the water which next came into it. This is an instance of what Dr. G. V. Poore has called, in his interesting paper read before the Royal Medical and Chirurgical Society on Nov. 23rd, 1897, "pollution at the periphery."

Dr. J. Priestley, medical officer of health of Lambeth, reported in 1900 on an outbreak of typhoid fever limited to three streets. Clothes soiled by urine and fæces of enteric fever patients had been mixed with other people's clothes at mangling houses (THE LANCET, Nov. 3rd, 1900, p. 1289). This outbreak is part of the same one which Dr. W. H. Hamer referred to fried-fish. It is quite possible, however, that both causes may have been at work in the parish.

Dr. Renon (Paris) found that the intensity of typhoid fever in a ward next to a crèche (to which mothers with their infants were admitted) was *much increased*. His explanation was as follows: "Various forms of enteritis are common in the crèche and despite every care it is only natural that the different organisms of infantile diarrhœa exist in enormous numbers both in the crèche and in the adjoining ward. Probably, therefore, typhoid patients suffering from typhoid fever are infected secondarily by microbes from infantile diarrhœa."

We now come to the important question of the connexion between the ground and ground-water or subsoil-water with the spread of typhoid fever. In 1856 Professor von Pettenkofer of Munich, having failed to establish any connexion between the prevalence of either cholera or typhoid fever in that city with the drinking-water, commenced his observations on the variations in level of the subsoil water, and he came to the conclusion that the outbreaks, both of cholera and of typhoid fever, occurred during the fall of the subsoil water after considerable rise, and this is graphically shown on the chart which he prepared, a copy of which has been kindly lent to me by Dr. C. Childs. His opinion was that for an attack of one of these diseases three things were necessary—first, the poison of the disease; secondly, a polluted subsoil; and third, ground water falling after a rise. An excellent summary of his views will be found in a paper by Dr. Childs in vol. xvii. of the Epidemiological Society (new series). Professor von Pettenkofer was so impressed with the immunity of the city of Lyons from cholera, which disease, although it has been introduced several times, has never spread there, that he wrote a paper accounting for this by his ground-water theory, but it must be remembered that typhoid fever was formerly extremely prevalent in that city, whereas by the same theory it ought to have been rare. My belief is that the immunity of Lyons from cholera is due to the fact that the poison has never got at the drinking-water, but that typhoid fever formerly spread there, and sometimes to an enormous extent, on account of the very defective sanitary arrangements, and especially the fact that the cesspools were under the courtyards of the houses and ventilated into the water-closets in the suites of rooms, there being no traps under the basins of the closets, such a method of infection being not only possible but frequent in the case of typhoid fever but being unknown in cholera.

Dr. Buchanan, in a paper which he read before the Society of Medical Officers of Health in the session 1869–70, stated that the evidence obtained from Pettenkofer in his opinion "told in an opposite direction; the question is of two diseases which are more than any others communicable by excremental matter in drinking-water and it is just when soil water is sinking that wells sunk in various soils will furnish impure supplies. The presumption, then, is that the incidence of cholera and enteric fever with sinking soil water is directly operative through the drinking-water supplied by wells." In support of this view Dr. Buchanan's experience furnished him with numerous instances of towns where, a water-supply from external sources having been previously obtained, works which had for one effect a considerable lowering of the soil water were undertaken without any outbreak of enteric fever. While admitting Pettenkofer's theory that subsidence of soil water is a condition favourable to the prevalence of enteric fever he would add this qualification "where the supply of drinking-water is derived from the soil on which it stands." But the decrease of typhoid fever in Munich under von Pettenkofer's advice was so remarkable, as seen by a table also kindly lent to me by Dr. Childs, that it requires special attention. This diminution was produced by the purifying of the subsoil, by making cesspools watertight, by extending the system of sewerage, and, finally, by the sudden abolition of the 800 slaughter-houses in the city in 1878. It is quite obvious that purification of the subsoil must have been attended by considerable purification of the water of the wells by which the town was supplied "until 1883, three years after the epidemic waves had ceased when the high land water-supply was introduced. This supply has gradually been distributed to the whole city." I cannnot help thinking that the drinking water in Munich had a great deal more to do with the prevalence of typhoid fever there than Pettenkofer thought was the case.

In the tenth report of the medical officer of the Privy Council (1867) is an account of Dr. Thorne Thorne's investigation of an outbreak of typhoid fever at Terling, in Essex. This was an epidemic which Sir John Simon describes as follows: "The epidemic at Terling, in Essex, was one of extraordinary dimensions. In that village of only 900 inhabitants, and for the most part within a period of two months, fully 300 persons were attacked with typhoid fever and 41 of the number died. That is to say, the one preventable disease in that short time killed a larger proportion of the population than all causes of death put together ought to have killed there in two years. The conditions which rendered possible this most calamitous visitation of disease were, as in all our other experience, conditions of local filth. At Terling such conditions were at their worst. Round what pretends to be the house accommodation of the tillers of the soil in Terling (a scanty, overcrowded supply of dwellings of the meanest description) every possible source of pollution for air and water was accumulated; the peculiar porous soil which underlay all this filth was, of course, continuously absorbing it; the water-supply of the population was derived from wells, most of them sunk in that excrement-sodden

sponge of earth. Some 10 days before the outbreak of the fever, after an extraordinary period of drought, a sudden great rise in the water level of the wells was observed, and this, of course, denoted a long-delayed scouring of that foulest soil into the water-supply of the now poisoned population."

Dr. Thorne Thorne remarks in his report: "The general tendency of the evidence which I obtained is to the effect that the water-supply of Terling was the great infective influence and it will be observed that some of the following cases not only conduce to that general conclusion but also seem very definitely to connect the outbreak of disease with a particular change in the level of the surface (subsoil) water. Everywhere I was informed that the water in the wells had gradually sunk during the latter part of the summer and autumn; in the shallow ones this had been unmistakeably seen, in some of the deep ones I found that the rope holding the bucket had to be let out to an unusual length, and in one instance I was told that after the latter had been lowered into the well such was the scarcity of water that it had to be oscillated to and fro in order to get any in. The date at which the water reached its lowest point varied according to the altitude on which the well was placed and also to its depth. One had been empty two months preceding my visit, a second three weeks; in others the water had been gradually sinking until the latter end of November. Following this drought came a sudden flow of water into all the wells and this, I was informed, took place about three or four weeks before I arrived at the village. In three cases, however, I was enabled to ascertain the exact period of its occurrence and thus to trace out the connexion which it bore to the disease."

Shortly after the water rising again in these wells the outbreak of fever occurred. In explanation of this Dr. Thorne remarks: "It is evident that for years the land springs supplying the village must have washed the foul materials which had soaked through the ground into the wells, although, owing to the water being very abundant, the contaminated solution thus formed was very much diluted. In connexion with this I would call attention to the statement which I have made to the effect that typhoid fever had existed in Terling for at least five years. Recently, however, although the soakage of filth into the ground has been going on there has been a deficiency in the water-supply. That filth must have accumulated until the rising surface water took place, when the whole would naturally be washed from the surrounding ground into the wells and thus give rise to an intensely saturated solution. Great interest, therefore, attaches to the etiological relation which exists between this very severe outbreak of typhoid fever and the state of the water-supply, and it deserves the more notice because the facts observed are not in accordance with those noticed in Munich by Professor Buhl of that city, for the outbreak of the disease did not coincide with the period that the wells were low, but, on the contrary, dated from the time when the water was regaining a high level." (Tenth Report of the medical officer to the Privy Council for 1867.)

Professor Buhl states that with the fall of the ground water typhoid fever makes its appearance in Munich, and that the magnitude of the outbreak depends upon the rapidity of the fall, but that when the water again rises the fever disappears, and this quickly if the water rises quickly, slowly if the reverse occurs (*Zeitschrift für Biologie*, vol. i.).

My friend, Professor Dr. Kuborn of Seraing, Liége, has kindly sent me a copy of a report on an epidemic of typhoid fever which occurred at Liége in 1882-83. The outbreak was generally spread over the city, even in many of the best houses. After a careful inquiry the conclusion was arrived at that it was due to infection of the soil by numerous dejections of typhoid fever patients every year and that the germs were transported by the air into houses in the form of dust. The disease was especially spread in houses where the streets are the least cleanly and where the interstices between the stones are wide. Of 30 workers on the pavements no less than 10 had suffered attacks of typhoid fever. Although some of the wells were no doubt contaminated by leakages from cesspools the epidemic was so general that it could not be accounted for in that way.

Sir Charles Cameron attributes the prevalence of enteric fever in Dublin, which city has an excellent water-supply, to foul subsoil, as he considers that defective sewers and drains, many of which, moreover, have been replaced by sound ones, are not sufficient to account for the unusual prevalence of disease in that city. To quote from his own report on the etiology of typhoid fever: "The zymotic death-rate has greatly declined but still typhoid fever more than holds its own. I can only account for this by assuming that the microbes of the disease have established themselves in the soil, that they multiply therein, and that they issue occasionally from it into the atmosphere, which consequently becomes infected. It is only in this way that we can reasonably account for the periodic character of the disease, for its seasonal intensity, for its epidemics. ..... In the soil therefore we must look for the cause of the endemicity of typhoid fever in Dublin and in other places. This theory is greatly strengthened by the fact that the porous soils are to a much greater extent likely to be the habitat of the organism than the stiffer clays. The conditions of existence for all kinds of organisms are more favourable in loose soils than in adhesive dense clays in which air cannot freely circulate. The action of strong winds and the rising and sinking of underground water more readily cause movements of air in gravels and loose soils than in clays, and the escape of microbes from the former under such circumstances must the more freely occur. The streets of Dublin have lately been to a large extent paved with stone setts, which circumstance may, perhaps, account to some extent for the increase of typhoid fever. The underground air cannot now diffuse into the atmosphere over the roadway, and therefore may be drawn in larger quantities into the houses, the basement floors of which are rarely concreted."

In his annual report on the public health of Dublin for 1891 Sir Charles Cameron gave a map showing the distribution of 1988 cases of typhoid fever in that city. He pointed out that on gravel soil the ratio of cases to the population was 1 in 92·8 and on clay 1 in 145·3. Thus the disease is much more prevalent on gravel, as is usually the case. He expresses his belief that these facts appear to show that the organisms that produced typhoid fever escaped into the air more readily from the gravels than from the stiff and usually moist clays.

In a very interesting, though short, report on typhoid fever at Lawrence, Otsego County, New York, in 1891, the cause of the outbreak was described as follows: "We have an epidemic of sudden development, lasting through two months, occurring now at one village and now at another, without a central focus. It occurred in a place having no common source of water-supply, no common system of drainage, and no common distribution of milk or other article of food. It appeared upon an infected site, one in which the disease is regularly recurrent and endemic, and in a locality where typhoid fever is common, other epidemics of severity having within a recent period occurred in neighbouring communities. The factor which determined this fulminant outbreak does not appear upon the surface. That it was one of general application is evident. The only one that can now be cited is in connexion with the soil water and the influence upon it of the unusual drought. This has been sufficient to cause the wells to be low, some of them failing entirely. It is under this condition that the germs dormant in the soil are found to develop into activity. They were supplied from pre-existing cases of past seasons. There is good reason to believe that soakage of these into independent wells, under conditions of soil and of a season of the year especially favourable to developing them, effected a widespread infection of the sources of water-supply and so produced the general and simultaneous occurrence of the disease. That the so-called 'ground theory' of the origin of typhoid fever thus finds expression—by infection of wells over an extended area rather than pollution by the atmosphere—will, I believe, come to find acceptance."

In the eleventh volume of the reports and papers of the American Public Health Association for 1885 Dr. C. A. Lindsley, secretary of the State Board of Health of Connecticut, New Haven, gives an account of an outbreak of typhoid fever at Madison, in that State, in September of that year, of which he says: "Indeed, nothing has been found bearing upon the special etiology of this outbreak except an unusually low elevation of ground water. To so marked a degree has the water level fallen that nine-tenths of the wells in the vicinity of the epidemic became dry. This is a measure of drought very much exceeding any previous drought within the memory of the old residents." Dr. J. Jamieson, medical officer of health of Melbourne, maintained at a meeting of the Australasian Association for the Advancement of Science that foulness of the soil from want of a sewerage system had much to do with the great

prevalence of typhoid fever in Melbourne (THE LANCET, March 24th, 1900, p. 891).

In 1894 Dr. Wheaton reported on the prevalence of fever at Mold, Flints. This was a remarkable outbreak from the fact that "the occurrence of multiple attacks in households and the association of the outbreak of fever with circumstances of privation among sufferers had suggested the possibility of the disease in question being typhus fever. On inquiry it was found to be typhoid fever. The fever had in all instances occurred in houses where unwholesome conditions existed, chief among which was the *contamination of the soil* around the dwelling by the soakage of filth from open midden steads and from defective drains. The fever was not spread by means of water or milk, but in some instances probably by emanations from defective sewers, in others by means of privies which had become infected by the excreta of sick persons; in others, again, by contagion within households."

In 1895 Dr. G. S. Buchanan reported on the sustained prevalence of typhoid fever at Wycombe Marsh (Bucks). There was no evidence that it was spread by milk or other food. There was no common sewer or public water-supply in the village. The outbreak was not traceable "to water from any one well or group of wells, or to contamination of wells in different parts of the village from any particular cesspool or cesspools," but, on the other hand, there were "indications of specific pollution of the whole body of ground water which supplies the wells of the village."

In 1896 Dr. Bulstrode reported on the continued prevalence of a mild type of typhoid fever at Chichester, Sussex, after the inauguration of a new drainage system and a public water-supply. Dr. Bulstrode showed that the outbreak was not due to the new sewerage or water-supply, as "prior to the introduction of either of these new conditions enteric fever prevailed in a very pronounced fashion in Chichester" and "the localities mainly invaded during 1896 were *those which have been repeatedly invaded in former years.*" The evidence showed that "*pollution of the soil* by defective privies and cesspools had operated as principal cause of the endemicity of enteric fever" (Twenty-sixth report of the medical officer to the Local Government Board). In the same year Dr. Bruce Low reported on the continued prevalence of the disease at Middlesbrough, North Riding (Yorks), especially during the previous three years. This endemicity was attributed to the fact that there were "over 3000 privy middens in the town in proximity to dwellings, a continual source of pollution of soil and air of the place, and affording favourable conditions for fostering of filthy diseases like enteric fever. Befoulment of the street surface during the process of emptying the middens constitutes continual source of danger. No suspicion attached to the public water-supply nor to the milk service."

In 1896 Dr. Bruce Low reported on the sustained prevalence of typhoid fever at Southend during many years. He found that there was no evidence of the spread of the disease by public water-supply or by milk service, but that "its persistence was associated with pollution of the porous soil, on which the town is built, by human excrement" (see also under heading "Oysters," twenty-sixth report of the medical officer of the Local Government Board).

In 1897 Dr. Reece reported on the prevalence of "fever" at Aldborough, East Riding (Yorks). This was one of those interesting epidemics in which there were "differing opinions as to the precise nature of the disease which was locally regarded both as Russian influenza and enteric fever." It is reported that "the clinical symptoms point to enteric fever." The first person attacked lived on the highest point of ground in the village. The source of the infection was not traced; nine houses were invaded: 28 persons were attacked and one died. Also a visitor to one of the invaded houses developed a similar disease on her way home and died. The houses were invaded at varying intervals extending over a year. "The order in which these houses were successively attacked followed the direction in which the underground water may be expected to travel from the first house invaded, which was, moreover, not free from the disease for a period of at least five months. A leaking cesspool at the first house invaded received slop drainage from the dwelling. The contents of the cesspool were used on the adjoining garden for manure, as also the contents of the bog-hole privy. The well which was sunk in gravel soil was five feet from the cesspool and 15 yards from the privy. Similar sanitary defects throughout the village."

In 1898 Dr. Theodore Thomson reported on the marked prevalence of typhoid fever during several years in the district of Swinton and Pendlebury (Lancs.). He found that the death-rate from typhoid fever and continued fever during the 10 years 1888 to 1897 was "more than double that in the 33 great towns and two and a half times that of England and Wales during the same period." There was no evidence tending to incriminate water-supply or sewerage conditions. He, however, found evidence from the localisation of the disease that it was associated with filthy conditions such as "unpaved and ill-paved yards, defective house and yard drains and leaky privy middens, all being conditions *conducive to serious fouling of the wells.*" Of this the chief medical officer, Sir Richard Thorne, says in his report: "Well-nigh every possible source of nuisance with which this midden-privy system can be associated has been allowed to grow up, but I would observe that in the face of the knowledge of which this country has been possessed during the past generation such a system must be regarded as nothing short of a relic of ignorance and barbarism which ought not any longer to be imposed on or permitted within civilised communities" (Twenty-eighth Report of the medical officer of the Local Government Board).

In 1899 Dr. Theodore Thomson and Colonel J. T. Marsh reported on the conditions of the city of Chichester, Sussex, which "has on several occasions attracted attention by reason of its liability to repeated occurrences of enteric fever in serious amount and where Mr. Power, the chief medical officer, says that it 'may be considered endemic.' After investigating and rejecting all the other conditions favourable to the spread of enteric fever the inspectors came to the conclusion that 'the prevalence of enteric fever in serious amount in Chichester is referable to the existence there of soil conditions especially favourable to the viability and growth of the infective material of this disease is not inconsistent with the facts ascertained by us and set out by us in this report. But, on the other hand, such hypothesis, while not inconsistent with these facts, does not at present afford adequate explanation of features that have characterised the fever in its distribution in time and place in Chichester. Fuller knowledge of soil conditions in their relations with fever prevalence may account for these features; without that knowledge it is not possible to arrive at definite conclusion."

The most remarkable instance of the passage of typhoid poison a considerable distance underground occurred at the village of Lausen, near Basle, in Switzerland, and was investigated by Dr. Hägler of Basle (*Deutsche Vierteljahrsschrift für öffentliche Gesundheitspflege*, Band vi., S. 154, and sixth report of the Rivers Pollution Commissioners, p. 463). In this previously healthy village, which had never been known to be visited by an epidemic of typhoid fever, and in which not even a single sporadic case of the disease had been observed for many years, an epidemic broke out in August, 1892, which attacked almost simultaneously a large proportion of the inhabitants. About a mile south (*viertelstunde*) of Lausen, and separated from it by the mountain ridge of the Stockhalden, lies the small parallel valley of the Fürlerthal. In this valley lived a farmer, in a solitary farmhouse, who was attacked on June 10th by typhoid fever, just after his return from a long journey. A girl was attacked in the same house on July 10th; and in August the farmer's wife and son sickened of the same disease. There was no communication, so far as could be ascertained, between the farmhouse and the village of Lausen. On August 7th, 10 of the villagers in Lausen were attacked by typhoid fever, and within the next nine days the number of cases had risen to 57, out of a population of 780 living in 90 houses. Within the first four weeks of the epidemic the number of cases rose to 100, and at the close of the epidemic, at the end of the following October, 130 persons—or 17 per cent. of the inhabitants—were attacked, besides 14 children infected in the village during their holidays who sickened with typhoid fever after their return to schools in other places. Except in six houses which were supplied with water from their own wells the cases were pretty evenly distributed throughout the entire village and the above six houses were exempt from typhoid fever. This remarkable fact threw suspicion upon the public water-supply which came from a spring at the foot of the Stockhalden ridge, which is probably an old moraine of the glacial epoch, and such a source might reasonably be regarded as above suspicion of pollution. Observations upon a brook in the Fürlerthal Valley and of the spring at Lausen showed, however, that there was a direct communication between the two. Among the observations it was noted that whenever

the meadows—below a hole spontaneously formed 10 years before by the giving way of the soil a little below the farmhouse—were irrigated with water from the Fürler brook the volume of the Lausen spring became greatly increased within a few hours. This irrigation had been carried on during the summer, from the middle to the end of July, the brook being polluted by the typhoid dejecta of the farmhouse patients. It was in direct communication with the closets and dung-heaps of the infected house; all the chamber slops were emptied into it and the dirty linen of the patients was washed therein. It was observed, also, that the water supplied to Lausen was at first turbid, acquired an unpleasant taste, and increased in volume. Three weeks or so after the commencement of the irrigation the epidemic began in Lausen. But Dr Hägler did not rest satisfied with this evidence and made the following experimental demonstration of the correctness of the assumption that the epidemic was due to the pollution of the Lausen water-supply by the dejecta of the typhoid fever patients in Fürlerthal. The above-mentioned hole in the Fürler valley was opened and the brook led into it; three hours later the fountains of Lausen gave out double their previous delivery of water. A solution of 18 hundredweight of common salt in water was now poured into the hole and soon the Lausen water was found to react more strongly for chlorides than before; the chlorine reaction went on increasing and the proportion of saline matter in the fountains had increased threefold. All doubt as to the passage of water from the fever-stricken Fürlerthal to Lausen being thus removed the question as to whether the water found its way through natural fissures or percolated through porous strata was attempted to be solved by carefully and uniformly diffusing two a half tons of flour through water which was then thrown into the hole. But neither an increase in the amount of solid constituents nor any turbidity of the Lausen water was observed to result from the addition. This experiment, however, in the face of the previously observed turbidity of the fountains whilst irrigation was going on in the Fürler valley is hardly conclusive against the possibility of the water finding its way from Fürlerthal to Lausen by natural conduits. Two things this interesting epidemic does, nevertheless, prove beyond doubt; first, that animal excreta do not, when taken in drinking-water, produce typhoid fever; and next, that typhoid excreta may, when introduced into a water-supply, induce typhoid fever in a distant community when the water in its passage is not freely exposed to the atmosphere (Stephenson and Murphy on Public Health).

In *Public Health* for February, 1902, is an important paper by Dr. Edmund M. Smith, medical officer of health of the city of York, on the Incidence of Enteric Fever in York and its Relation to Privy Middens. In this paper he states that for many years past typhoid fever has been endemic in the city of York. In 1900 there was an unusually heavy outbreak which "emphasised the observations and experiences of previous years ..... chiefly that the disease tends to occur in certain midden privy districts." One particular district where there are midden privies and a polluted soil has been the first in the city to be affected in the summer during each of the last three years. It has been impossible to connect the outbreaks in any way either with water or milk, oysters or ice-creams. He suggests that besides the pollution of the soil the poison is carried about by flies and other insects and also by cats, mice, rats, and birds.

Improperly managed earth-closets have in the two following cases been considered to be the cause of outbreaks of typhoid fever. Dr. Ballard reported in 1875 that at the West Riding House of Correction typhoid fever was probably spread by the use of infected earth supplied to earth-closets (Report of the medical officer of the Local Government Board, 1875). I once traced an outbreak among the boys of a union school to improper storage of the compost from the earth-closets which was in a very foul semi-liquid mass under a shed near which the boys (but not the girls) used to play; there were no cases among the girls.

(To be continued.)

INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH.—The following officers have been elected for the 1902–3 session:—President, Dr. J. Spottiswoode Cameron; editor, Dr. F. J. Allan; treasurer, Mr. George Millson; secretaries, Mr. Herbert Jones and Dr. Joseph Priestley.

The Goulstonian Lectures

ON

SOME ABNORMAL PSYCHICAL CONDITIONS IN CHILDREN.

Delivered before the Royal College of Physicians of London on March 4th, 6th, and 11th, 1902.

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LECTURE III.[1]

Delivered on March 11th.

MR. PRESIDENT AND GENTLEMEN,—In the preceding lecture we were considering the occurrence of morbid defects of moral control in children without general impairment of intellect and without physical disorder: I pointed out that we could recognise certain groups of cases differing in the time of onset and in the duration of the disorder; that whilst in some cases the defect of moral control dated from the earliest period at which such control becomes possible, in others nothing abnormal was observed until the child was already several years beyond the age of infancy. Further I pointed out that whilst in some cases the defect appeared to be due to a congenital limitation of the capacity for the development of moral control in others it seemed to be the result of an arrest of such development at a very early stage by some physical disease affecting the brain in infancy. In another group of cases there appeared to be a loss of already acquired moral control; and it was shown that whilst in some cases the loss was probably permanent in others it was temporary.

In illustration of this temporary loss of moral control cases were quoted in which the psychical disturbance after passing off showed no tendency to recur; but there is yet another subdivision of this group and one of considerable practical importance—cases in which periods of defective moral control alternate with periods in which no such defect is present, or it may be that with some degree of permanent defect exaggerations of this defect occur at irregular intervals. A boy, aged 11½ years, was sent to me with this history. For weeks together he was affectionate, well-behaved, and in no way troublesome, then he would seem to lose his moral control to a greater or less degree for several days during which he became quite dangerous in his spitefulness, seizing every opportunity to inflict pain on other children, banging their heads against the walls or desks, twisting their arms and otherwise maltreating them. During these periods he became dishonest and untruthful and had to be watched carefully to prevent the thefts which he perpetrated whenever he had the chance; at these times also he masturbated shamelessly and even exposed himself indecently in the class at school. The slightest provocation at such times produced an outburst of rage in which he scratched the skin off his hands and face till they bled and ground his teeth and wrung his hands. When punished for his thefts with beating he cried and protested that he would never do it again, but he stole again within the next few days. This was a well-grown boy who talked brightly and intelligently and was said by his school teacher to be by no means backward in school attainments—certainly so far as reading and calculation were concerned he appeared to be fully up to the average—but his gait, with his elbows slightly flexed and wrists loosely dropped, suggested a lack of mental tone, if I may use so vague an expression. His head was square and rather large, its maximum circumference being 21¾ inches; his palate was very high and narrow, forming a sharply pointed V. There was no history of insanity or epilepsy in the family, but there was a noteworthy fact in the boy's history, that just after measles in infancy he had severe convulsions and was said to have been comatose for three days. Similarly a boy, aged 13

[1] Lectures I. and II. were published in THE LANCET of April 12th (p. 1008) and 19th (p. 1077), 1902, respectively.

years, had been subject to outbreaks of a propensity to steal from very early childhood. For several months together he was as honest as other children and showed no tendency to steal, then for a short time, perhaps a day or two, he stole numerous articles, sometimes of considerable value, sometimes almost worthless, and displayed some ingenuity in concealing his thefts. Another boy, aged 13 years, showed a similar recurrence of passionateness. From infancy up to the age of six years he had banged his head against anything near on the least provocation, and although this head-banging has now ceased he still has outbursts of excitement with extreme passionateness in which he has at various times kicked and struck his mother and becomes so unruly that it is necessary to give him bromides during these outbreaks. The sister of this boy was mentioned in my last lecture as having shown very similar manifestations for a few months only and their mother complains of a nervous twitch in her face and limbs occasionally. In view of such cases as these we must, I think, add recurring loss of moral control to the moral disorders which we have already considered.

For the sake of clearness these disorders might be grouped thus:—1. Morbid failure in development of moral control: (*a*) congenital limitation of capacity for moral development; and (*b*) arrest of moral development by disease in infancy. 2. Morbid loss of already acquired moral control: (*a*) in relation to physical disease: permanent or temporary loss of moral control; and (*b*) apart from physical disease; permanent, temporary, or recurring loss of moral control. All these varieties, as we have now seen, may occur apart from any general impairment of intellect.

I turn now to the clinical facts which seem to corroborate the morbid nature of the moral defect in those cases where there is no confirmation to be obtained from associated physical disease. By far the most striking evidence is to be found in the family history.

Family history.—Disorders of intellect, epilepsy, or moral degeneracy of one kind or another figure in the family history in a considerable proportion of these cases. This point was noted in 17 out of 20 cases, and 12 patients out of the 17 showed evidence of instability of this kind: (1) the father was insane and had murdered the child's mother; (2) the father was a confirmed drunkard; (3) the father was feeble-minded, he deserted the mother before the birth of the child; (4) the father was a sexual profligate, he deserted the mother when the child was an infant; (5) the paternal grandfather was of immoral character; (6) the maternal grandfather died from diabetes, two maternal uncles were confirmed drunkards, and a third has attempted suicide twice; (7) the maternal grandfather tried to commit suicide three times, a maternal uncle died in a lunatic asylum, and the paternal grandfather was insane; (8) an uncle and an aunt on the maternal side were both epileptic; (9) a maternal aunt was epileptic and insane; (10) the paternal grandmother was thought to be insane; (11) an uncle had epilepsy, and the mother was neurotic; and (12) the mother was neurotic and the child's brother has recurring attacks of passionateness.

"*Stigmata of degeneration.*"—Another link in the chain of evidence is the presence of certain anomalies of physical conformation in many of these children. No less than 15 out of 19 cases in which the point was investigated showed obvious anomalies. The most frequently noticeable feature was the large size of the head. In 15 cases head measurements were taken; in seven of these the maximum circumference was decidedly above the average for the age; in one case only was the measurement considerably below the average. This will be seen from the accompanying table, in which the average normal measurement (maximum circumference) for the year is given for comparison; the normal average is taken from statistics collected chiefly at the Children's Hospital, Great Ormond-street.

In four out of the 15 cases the frontal region was abnormally narrow. The palate showed some deformity in seven of these 15 cases; all the seven were strikingly high and narrow and two of them formed a sharply pointed V anteriorly, in an eighth case it was noted that the palate was unduly high and narrow but not to such a marked degree as in the seven other children. To these anomalies I should attach very little importance if they stood alone, but taken in conjunction with the family history, with the manifestations of defective moral control, and sometimes with other mental or nervous peculiarities in the child, they may, I think, carry some weight as evidence of abnormal development. Some observers, no doubt, would have found other so-called "stigmata of degeneration" in the epicanthic fold which was present in two cases, in the prognathous aspect in two others, in the unusually early signs of puberty in two, and even in the sluggish circulation, marked by cold or blue extremities, in another.

Table showing Head Measurements in Children with Morbid Defect of Moral Control without General Impairment of Intellect.

Age of child.	Maximum circumference of the head in inches.	Average maximum circumference (inches) for the year in normal children.
4 7/12 years.	21	19·6 } 4 to 5 years.
4 7/12 ,,	20½	19·6 }
5 ,,	20½	19·8
5 4/12 ,,	20½	19·8 } 5 to 6 ,,
5 11/12 ,,	20	19·8 }
6 ,,	21	19·9 }
6½ ,,	21⅜	19·9 } 6 to 7 ,,
9 ,,	20⅜	20·3 }
9 4/12 ,,	20¼	20·3 } 9 to 10 ,,
9½ ,,	21⅜	20·3 }
10 ,,	20⅜	20·4 }
10½ ,,	20⅜	20·4 } 10 to 11 ,,
11 1/12 ,,	19⅜	20·4 }
11½ ,,	21⅜	20·4 } 11 to 12 ,,
13 1/12 ,,	21¼	21...13 to 14 ,,

Associated nervous and mental disorder.—There is, however, further, and to my mind important, evidence on this point in the relation of the moral defect to other morbid nervous and mental conditions. In one of the most striking cases of morbid defects of moral control which has been recorded,[2] the boy even when he reached the school age would eat plaster, chalk, wood, covers of books, pieces of blanket, and so on—in fact, showed that curious psychosis which goes by the name of "pica." The history of 12 years of this boy's life, up to his outrageous marriage at the age of 15 years, is one long story of stealing, lying, lack of natural affection, indecency, sexual immorality, and an attempt at suicide. His general intellectual development was precocious, for he was able to read and recite at three years old. It is interesting to observe that it is specially noted in this case that "the head is large." A somewhat similar perversion of appetite, although hardly amounting to "pica," was present in one of the cases which I mentioned in my last lecture. A boy, aged five years, with marked defect of moral control, was said to eat strange things. Just after having a good meal he would steal raw meat and eat it, and he would pick up and eat a dirty piece of orange-peel out of the ashes in the grate. Some of these children are somnambulists, or show other evidence of nervous instability in night-terrors or in pronounced, almost choreiform, fidgety movements, such as I have referred to under Dr. Warner's term, "microkinesis," and I have mentioned the occurrence of diurnal incontinence of fæces in one case—a phenomenon which is not infrequently associated with other symptoms of unstable nervous equilibrium in children who show no impairment whatever of intellect. The relation to insanity also (I use the term here to exclude the defect of moral control which we are considering) points very strongly in the same direction. I referred to the father of one of these morally defective children who had himself shown a morbid defect of moral control from his earliest years in extreme passionateness, quarrelsomeness, and jealousy. On reaching adult life he developed maniacal symptoms and murdered his wife. In another case, which was not under my own observation, morbid defect of moral control in a child was followed in early adult life by insanity, and the girl to whom I referred as having shown permanent loss of moral control after scarlet fever at the age of seven years subsequently (apparently in adolescent or early life), after some disappointment, jumped off the roof of a verandah and was found below "screaming and maniacal." The acute mental disorder lasted for two days.

The occurrence of loss of moral control as a marked feature

[2] Boston Medical and Surgical Journal, May, 1888, p. 537.

of incipient insanity has been emphasised by Dr. Savage and the occasional occurrence of insanity in the after-history of these children with defective moral control seems to bring these disorders which we have considered into very close relation with the more general morbid state of mind which is seen in insanity. And, indeed, although insanity is rare in childhood there are cases in which it seems clear that loss of moral control in children, as in adults, is a symptom of active insanity; for instance, a backward girl, aged 10 years, who was under my care, one week after an attack of influenza became self-willed and difficult to manage. She seemed to have lost her affection for her mother, said that she wished that her mother was dead, and that she would run away from her. A fortnight later she was brought home from school where she had suddenly begun rushing round the room crying and singing. She continued in a state of wild restlessness for one day and then gradually became less excited, and three weeks after the onset of mental symptoms she had regained her normal state as a tractable, good-tempered child. In another case a boy, aged eight years, became passionate and unruly after a blow on the head, but the moral change was accompanied by attacks of excitement alternating with depression and definite religious delusions. Such cases as these are obviously in a different category from those which we have been considering, but they may serve to emphasise the closeness of the relation between defect of moral control and other morbid mental states in children.

We are, I think, justified in concluding that apart from the character of the manifestations of moral defect, which, as I have already pointed out, are often in themselves strongly suggestive of a morbid mental state, there are good reasons for admitting the existence of a morbid defect of moral control in children without any such general impairment of intellect as is ordinarily recognised as imbecility, feeble-mindedness, or insanity.

I come now to the consideration of the psychical conditions which obtain where moral control is morbidly defective, with or without physical disease, and apart from any general intellectual impairment.

As in the cases which I considered in my first lecture there are three factors which have to be taken into account, but inasmuch as it is evident that here there is no interference with the cognitive relation to environment it would seem that the failure of moral control must be due either to deficiency or loss of moral consciousness or to some failure of volition. In so far as these cases have been recognised at all as due to a morbid mental state, there has been a tendency to assume that they must be due to a morbid lack of moral consciousness, or, as some would call it, "moral sense," but whilst there seems to be good reason to believe that in certain cases this is so, it is an extremely difficult point to determine. To a certain extent one can judge from the child's conduct whether moral consciousness is present with regard to the particular activity—for example, from his efforts to conceal his vicious acts, from shame on discovery, and from remorse after the act; but there is an obvious fallacy in the fear which arises out of the memory of past punishment. For instance, a boy whom I have mentioned before had been punished many times for theft; he took great pains to conceal his stealing, and made great protestations of sorrow and reform on discovery, but he would commit the same offence again very quickly and neither for this nor for his filthy habit of wilfully defecating in bed did he show any shame. There could be little doubt that his sorrow was only an attempt to avoid punishment and was no more evidence of moral consciousness than the cowering of a dog after a fault for which it has been whipped on a previous occasion. But even when it seems obvious that moral consciousness is defective care is needed to distinguish the defect which is the manifestation of a morbid condition from that which is the result of deficient training, and it is necessary to take into careful consideration in each individual case the environment and the age of the child. After allowance has been made, however, for all these various sources of fallacy it seems clear that in some children—for instance, the boy just alluded to—there is a defect of moral consciousness which cannot be accounted for by any fault of environment, and the fact that in some cases the defect dates from very early childhood and has already persisted for several years seems to point to a morbid limitation of the capacity for the development of moral consciousness. In some of the cases also where loss of already acquired moral control occurs there seems to be a loss of moral consciousness, and if this particular factor in moral control be, as one can hardly doubt, the highest and latest product of mental evolution a special liability to loss or to failure in development would be quite in accordance with the phenomena of evolution.

As a matter of speculation one might suggest that in some cases the incapacity for the acquirement of moral consciousness is a developmental reversion to an earlier type; and in this connexion one might mention a curious trait which is noticeable in some of these children—namely, solitariness: the child shows no inclination to associate with or to make friends with other children, and although apparently perfectly intelligent shows a complete lack of natural affection, so that its parents seem hardly more to it than any stranger might be—a point which may have some significance if the view be adopted that "so-called moral sense is aboriginally derived from the social instincts" (Darwin).

But the third possible factor in defective moral control—namely, a morbid failure of volition—has also to be considered. Moral control, as we have seen, is concerned not only with such deliberate acts as stealing and lying but also with those activities which are connected with the emotions, and, as I mentioned in reference to cases of cerebral tumour, the defect of control of these particular activities is sometimes associated with a morbid exaggeration of emotional excitability which is quite independent of defective moral control. This is clearly shown by the expression of such an emotion as fear which has no moral relations; for instance, in the case of a girl with pontine tumour to whom I referred in my last lecture, during the period in which she was subject to outbursts of rage there was also an altogether abnormal degree of timidity. The child started and shrank away when she was looked at by any stranger and burst into tears whenever attention was drawn to her. It seems probable that in such a case inhibitory volition has to cope with a morbid increase in the tendency to certain activities—in physiological terms a morbidly exalted irritability of nervous centres—so that even without absolute defect of volition it may become relatively insufficient.

As I have already pointed out, the fact that a morbid failure to control those emotional activities which have no moral relations is sometimes associated with failure to control those other emotional activities with which moral control is concerned, such as passionateness and jealousy, strongly suggests that the same cause underlies the failure in both cases, and that this is a deficiency of inhibitory volition rather than any impairment of moral consciousness. And there is some reason to believe that outbursts of rage in some of the cases where there is no evidence of cerebral lesion may be due to a similar exaggeration of excitability with consequent insufficiency of inhibitory volition. I have already referred to a boy in whom recurring attacks of passionateness were accompanied by recurring excitability. In a younger boy, between three and four years of age (whose case I have not included in any of the statistics mentioned on account of his very early age), great excitability with altogether abnormal timidity and the occurrence of those curious paroxysms of fear which have been called day-terrors, and in which the boy would suddenly scream with fright several times a day without any apparent cause, were associated with extreme passionateness, so that on very slight provocation he would kick and bite. In this case it was specially noted that after the outbursts of rage he would caress the injured person in evident remorse. It seems at least possible that a similar lowering of resistance, if one may so describe the nerve-cell alteration, whatever it may be, which underlies an increased excitability of nervous centres, may account for other manifestations of morbid defect of moral control. A stimulus, whether it be in the nature of a percept or a concept, which in the healthy mind would have only such a tendency to excite a particular activity as could be controlled by inhibitory volition, might in a morbid condition excite such activities as stealing, lying, vicious or spiteful acts, with an intensity which is beyond the control of inhibitory volition, and this quite independently of any lack of moral consciousness. Take, for instance, the case of the boy, aged 11½ years, whom I mentioned at the beginning of this lecture: his mother stated that in the midst of playing quietly with other children he would suddenly seize two of them and bang their heads together, making them cry with pain and, she added spontaneously, "he seems unable to resist it." Some of these morally-defective children who steal things without any apparent

object have said that when they saw the thing they felt an irresistible impulse to take it.

But in the absence of any morbid increase of excitability the defect of inhibitory volition would seem in some cases to be absolute rather than relative, and any further analysis of the psychical alteration can only be tentative, especially in the obscurity which surrounds the psychology of volition. Adopting, however, the view that "effort of attention is the essential phenomenon of will" (James) I would point out that a notable feature in many of these cases of moral defect without general impairment of intellect is a quite abnormal incapacity for sustained attention. Both parents and school teachers have specially noted this feature in some of my cases as something unusual. I have mentioned the case of a boy with moral defect who would repeat the process of saying "Good-night" several times before he was aware that he had done so; the same boy would often put his boot on the wrong foot apparently without noticing it. Another boy, aged six years, with marked moral defect was unable to keep his attention even to a game for more than a very short time, and, as might be expected, the failure of attention was very noticeable at school, with the result that in some cases the child was backward in school attainments, although in manner and ordinary conversation he appeared as bright and intelligent as any child could be.

These considerations on the nature of the defect may appear too speculative to have any practical value, but I venture to think that they have some basis in clinical fact, and my reason for bringing them forward in this connexion is to emphasise the possibility that other morbid conditions beside defect of moral consciousness may be responsible for defect of moral control. The child who steals repeatedly, or lies, or, with or without apparent provocation, inflicts injury on other children, and is proved to have full knowledge of the wrongness of his acts, may nevertheless be just as truly led thereto—or, shall I say, allowed thereto?—by a morbid mental state, as the child whom we believe to be suffering from a morbid defect of moral consciousness.

There remains another point which may well be considered here and which is of considerable practical importance—namely, the intellectual condition of these children. Is a morbid defect of moral control compatible with a perfectly normal state of the intellect? The difficulty in answering this question depends largely upon the difficulty of defining exactly what is meant by "intellect." As I have already pointed out moral consciousness itself may be regarded as an intellectual function and its disorders therefore as disorders of intellect, and even volition, although itself hardly an intellectual process, is very closely connected therewith. But if we disregard psychological analysis and restrict the term "intellect" to its meaning in common usage, making it almost synonymous with intelligence and taking as our gauge the capacity for ordinary educational acquirements, then I think that it is possible to answer this question very decidedly. At least eight of my 20 patients were fully up to the average in intellectual capacity. They were bright, intelligent children, capable of any ordinary school work adapted to their age; and, indeed, one of the worst and most disastrous cases did excellently for a time, so far as educational progress was concerned, at a large public school. The remaining 12 patients had passed for children of average intellect and in some of them I think it would have been difficult to persuade any person without special experience that there was any intellectual flaw. Two of them, however, were undoubtedly backward, although they had for some years taken their place with children of their own age. Two others, although reported by their school teachers to be of average intellectual capacity, were, in my opinion, dull and slow. In some of these children there was, as I have already mentioned, a marked inability to concentrate and to sustain attention; in others memory seemed abnormally defective, and in at least two cases where the child was thought to be of average intellectual capacity there seemed to be an abnormal lack of judgment in regard to everyday matters apart from their moral relation. It would seem, therefore, that in the large majority of these children with morbid defect of moral control without physical disease, and without any such general impairment of intellect as is commonly recognised as imbecility or even feeble-mindedness, careful, and perhaps in some cases only expert examination will detect some abnormality of intellectual processes which in its most pronounced degree may form a link between this group of cases and those which I considered in my first lecture. But I wish to insist upon the fact that if ordinary intelligence and the capacity for educational acquirements be taken as the gauge of intellect then there can be no doubt whatever of the compatibility of an apparently normal intellect with a morbid defect of moral control.

It is clear that although there is no general impairment of intellect in these cases there is a psychical defect which may or may not be associated with abnormality of particular intellectual processes. The nature of this psychical defect we have already considered but the cause of its occurrence remains obscure. That there is not only a perversion of function in the higher nervous centres but an actual physical abnormality underlying the moral defect seems more than probable. We have seen that the association of defective moral control with general impairment of intellect is sometimes observed in forms of imbecility in which either a gross lesion or a developmental abnormality of structure is known to be present in the brain, and also that gross lesions of the brain, such as meningitis and tumour, may cause loss of moral control in children who show no general impairment of intellect. The structural changes, however, in these cases, so far as we can judge from the small amount of evidence which is available, are not sufficiently constant in their localisation to allow us to say that a lesion here or a lesion there will produce moral alteration, and the fact that a similar moral change occurs after more general diseases, particularly the specific fevers, and is followed sometimes by complete recovery, suggests that cell-modification dependent upon interference with cell-nutrition, may be the physical basis of the moral defect.

The very striking relation to the specific fevers strongly supports the view that toxic substances, such as are known to be present in the blood in some of the fevers, may be the determining cause of the alteration in cell-nutrition, and the results of recent research on epilepsy would justify a similar explanation of the relation of moral change to epilepsy. The gradual accumulation of toxins in the blood prior to the epileptic seizure would correspond to the loss of moral control during the days immediately preceding the fit. More localised causes also, such as inflammation of the meninges with its accompanying affection of the subjacent cortex, increased pressure from the presence of intracranial tumours, and head injuries, might be expected to interfere with cell-nutrition.

The occurrence of abnormalities of cell-structure in the brains of idiots who show no gross lesions suggests that cell-modification occurring during intra-uterine life or in infancy may account also for the limitation of capacity for moral development which we saw to occur in some children without any general impairment of intellect; and this suggestion finds some support in clinical facts. In two out of five cases in which there was no family history of insanity, epilepsy, or moral degeneracy, there had been severe convulsions in infancy, and one of these two patients, whom I have mentioned above, was said to have been comatose with the convulsions for three days. In some of the cases brought under my notice by Dr. Savage there was a history of very difficult and prolonged labour and I have referred to one case which came under my observation for morbid defect of moral control in which a difficult and instrumental labour had resulted not only in a marked degree of asphyxia, so that there was considerable difficulty in establishing respiration, but also in an Erb's paralysis; in others the mother had had some illness during pregnancy, and a premature birth in some cases may also have pointed to ill-health in the mother as a cause for defective development in the child; in fact, it would seem that the same causes which produce idiocy or imbecility in one child may produce limitation of capacity for moral development in another; and this is exactly what might be expected if moral control be, as I have suggested, the most recent and therefore most unstable product of mental evolution. Any cause which acting on the brain with greater intensity—that is, producing more profound alteration of cell-nutrition—leads to general impairment of intellect, may, when acting with less intensity, interfere only with the highest, the moral, function.

Perhaps I may be allowed to add to these speculations on the physical basis of morbid moral defect yet another which also has some support in closely allied conditions. The cell-changes which have been found in some forms of insanity in which heredity plays a prominent part suggest that a morbid loss of already acquired moral control, with or without obvious physical disease and quite apart from any such

mental change as would ordinarily be recognised as insanity, may be traceable to a low initial vitality of nerve-cells, determined it may be by heredity or other ante-natal influences.

Having now, as I think, shown that failure of moral control in a child of apparently normal intellect may be a morbid manifestation, however doubtful may be the exact nature of its physical basis, I shall venture to devote the short time that remains to some purely practical considerations arising out of the facts which I have mentioned.

The serious danger which these children constitute both to themselves and to society calls, I think, for more active recognition. We, at any rate, as advisers of parents and guardians, have a clear duty in warning them of the disasters which may occur. The pernicious influence which some of these morally defective children may exert on other children is appalling to think of. I have said very little about the sexual immorality which accompanies the other manifestations of morbid defect in some of these cases, but it is too important to be disregarded. Apart from masturbation, which is common in children who show no morbid defect of moral control, these children not infrequently show a desire to expose themselves indecently, especially to children of the opposite sex, and they sometimes show such unbridled lust that they are not safe to be left alone with other children. I shall not go into details for they would serve no useful purpose. I will only say that even some years before these children reach puberty their relations with other children may be most impure, and that as they approach puberty the danger naturally becomes more serious and in cases under my own observation, as in recorded cases, the uncontrolled sexual instinct has led to most outrageous and precocious immorality.

The possibility of physical injury both to themselves and to other children has also to be remembered. I have mentioned cases in which during outbursts of rage reckless attacks were made on others with knives, sticks, and missiles of various sorts; but, apart from passionateness, spitefulness and cruelty may lead to serious results. A boy, aged 10½ years, was brought to me with a history that he had always been difficult to manage but that he had been more outrageous during the past two or three years. He showed an almost diabolical ingenuity in inflicting pain on others. He had two baby-brothers, twins, aged two years. He put some shells in the oven on a tray and when they were well heated he told these two babies to hold out their hands for the shells which he then poured off the tray and so burnt their hands. Sometimes he would strike them on the head and make them cry apparently in wanton spitefulness. He persuaded his sister, aged four years, to sit on the back of a chair which he steadied by sitting on it until she was up and then he deliberately let the chair fall over backwards with the result that she struck her head and cut her lip, whilst he stood and laughed with enjoyment. He was cruel to animals; he would tie a string tightly round a kitten's neck, almost strangling it. The mother said that he was always trying to injure animals, so that she was afraid to keep any pets in the house. He was very untruthful and stole money which he gave away to his schoolfellows. He had behaved indecently both with girls and boys. This child was supposed to be of normal intellect but he was backward at school. He had the curious sullen manner which was noticeable in several of my cases; his frontal region was rather narrow, although the circumference of the head (20½ inches) was about normal. His paternal grandmother was thought to have been insane.

These children may also inflict injury on themselves. As I have pointed out, the keynote of the manifestations of morbid defect of moral control is self-gratification; and if for the moment "not to be" seems less irksome than "to be" they may not hesitate to choose it. A boy, aged 10 years, who had been under my observation as a hospital outpatient because he was troublesome and unmanageable and easily flew into a rage, one evening in one of these outbursts made a determined attempt to cut his throat and was only restrained by physical force. Another child, a girl, aged 11 years, was extremely passionate and was said to maltreat her younger brothers and sisters. For instance, on one occasion their screams attracted the attention of the neighbours who came in and rescued the children, who were scarcely more than infants, from their sister who was amusing herself by beating them with a thick rope. On one occasion this child was caught just about to throw herself from a third-storey window. She was a child of average intelligence, but with a small head, a narrow frontal region, and a very high palate. Her father drank heavily. She had been sent to a lunatic asylum for a short time before I saw her as she was thought to be dangerous. I have referred to the record published in America of 12 years in the life of one of these children. This boy, at the age of about 14 years, when not allowed to have breakfast with the rest of the family and threatened with punishment by his grandfather for stealing some money, deliberately shot himself, with very serious, but not fatal, result.

Apart from these risks there is the likelihood, nay, almost the certainty, that children with the more profound and permanent disorders of moral control will, if not protected from themselves, sooner or later bring public disgrace upon themselves and the families to which they belong and possibly be punished as criminals in spite of the evidence that their acts are the outcome of a mental state just as morbid as the more generally recognised imbecility or insanity. But whilst I think that it is only right to warn the parents of the possible dangers, it would seem, both from my own observation and from cases which have been brought under my notice by others, that the outlook is not so grave in all cases. Even where there appears to be a limitation of the capacity for the development of moral control the condition would seem to be comparable to imbecility in the capacity for development up to a certain limited extent; it is, in fact, a limitation, rarely, if ever, a complete absence. The limit of possible improvement may be a very narrow one and, whether it be narrow or wide, there is probably little hope in this particular group that the child will ever acquire a normal degree of moral control; but during the earlier years of childhood it is hardly possible to foresee to what extent careful training and environment will improve these cases.

With regard to those children in whom loss of already acquired moral control occurs as a morbid condition, with or without physical disease, it would seem that in some cases the condition is comparable to a temporary insanity and passes off after a variable duration, which may be days or months, and, as I have pointed out, in some cases it recurs at intervals like a recurrent mania. But it cannot be said that there is always recovery from these acquired defects. In the case recorded by Dr. Hack Tuke in which moral control was lost after scarlet fever at the age of five years, the patient still showed the moral defect when he had reached adult life, so that he required special supervision.

One other point may be mentioned in this connexion—namely, the apparent improvement for a time in some of these cases when the surroundings are changed. A common history is that the child has been tried at various schools and at each fresh school has seemed for a time to have overcome his morbid propensities but no sooner have the surroundings become commonplace and familiar than some fresh manifestation of his moral defect leads to his disgrace and early expulsion; similarly I have seen cases admitted to hospital on account of a supposed morbid defect of moral control and with a circumstantial narrative of some years of outrageous behaviour, but during the few days or weeks it was possible to keep them in hospital the behaviour has been exemplary, although in most of them the physical peculiarities to which I have referred, or some oddity of manner, together with the family history, left no reasonable ground to doubt the parents' statements. It would seem that as happens sometimes with hysteria and even with insanity in later life, the extra stimulus of unusual surroundings adds as it were a temporary reinforcement to volition, so that the morbid defect becomes latent for a time.

There are other aspects of this subject which it would be out of place to consider here but which are none the less of extreme importance for the welfare of these unfortunate children and for the good of society. The problem of education in face of the paramount necessity for separating some of these morally-defective cases from other children; the method of providing the constant and close supervision which is so essential in the management of these cases and which is often so impossible for the middle and poorer classes; how far restraint by confinement in special institutions is called for; and, last but not least, how far these children are to be held responsible for their misdoings—all these are questions which call urgently for consideration in their proper place. My object in these lectures has been simply to investigate the occurrence in children of morbid mental states in which only, or chiefly, the moral control is affected,

and to determine as far as possible under what conditions these morbid defects of moral control arise. I am only too conscious that I have but touched the fringe of an extremely difficult and complicated subject, but I shall have amply succeeded in my purpose if these lectures serve to draw attention to morbid conditions which have so far-reaching an importance.

ON SOME POINTS IN THE TREATMENT OF PUERPERAL ECLAMPSIA.[1]

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THE points to which I wish to direct attention are two. First, what is the effect of emptying the uterus in eclampsia? Will it stop the fits? Does it do good? Secondly, the effect of the tepid bath used to reduce temperature in certain cases of eclampsia.

1. In the treatment of eclampsia it has been for many years said that it is important quickly to empty the uterus. One excellent and popular recent textbook says that eclampsia differs from the fits of scarlatinal nephritis "inasmuch as they can be arrested at once by emptying the uterus." The author goes on to apply this principle and he says that the first thing in treatment is "the induction of labour by the most rapid means consistent with safety." The practical precept follows naturally from the assertion made as to the clinical history of the disease. Another recent writer, after quoting the statement that "emptying the uterus is a certain means of checking the fits," says that he prefers "to modify the statement by saying that if the patient survives the emptying of the uterus she will almost certainly recover." Further on the same writer says: "The shorter the duration of labour the better the prognosis of the case." Dührssen[2] of Berlin has devised an operation which he calls vaginal Cæsarean section, by which he says he can empty the uterus easily and safely in five minutes, and which he recommends as a sort of specific for eclampsia. Up to the date of publication of his latest paper he had only done the operation three times for eclampsia, although many cases have been treated in a way approximating to it.

This theory, that rapid delivery is beneficial, is no novelty, nor is it a new idea to cut open the soft parts in order that delivery may be quicker. Velpeau[3] in 1834 advocated the acceleration of delivery by incisions, and this was practised by Kiwisch, Scanzoni, Bodin, and others. In the work of Chiari, Braun, and Spaeth,[4] published in 1855, it is definitely stated that the artificial induction and acceleration of labour diminish the risks to mother and child arising from uræmic convulsions.

If these methods of treatment really produced the benefits expected from them it is strange that the profession should have been so slow to accept them, and that more than half a century afterwards a German teacher should resuscitate the acceleration of delivery by incisions, and that German professors should think it necessary to analyse laboriously hundreds of cases to show that prognosis is improved if delivery is hastened. Real improvements in the treatment of disease do not take half a century to become accepted. No one at the present time would think it needful to collect statistics to prove that antiseptics prevent septic poisoning, that the removal of ovarian tumours is good treatment, or that salicylates will shorten the course of acute rheumatism; and yet these were things unknown when Velpeau wrote. After more than 50 years of trial it is thought that the profession still needs to be persuaded that hurrying delivery in eclampsia is good treatment. Possibly those who so teach may be themselves a little uneasy and may have a subconsciousness that the foundation of their faith in this matter is a little insecure and needs support. Hence the pains recently given to the subject.

Prognosis in puerperal eclampsia is exceedingly difficult. It is possible, though difficult, to recognise when a patient with this disease is moribund. If the patient is recovering, as evidenced by cessation of fits, less depth of coma, and re-establishment of the secretion of urine, it may be safe to give a favourable prognosis. But early in the case, when the patient has had one or even a few fits and is in coma with almost suppressed urine, but the temperature is not very high or the pulse very rapid, it is not possible to say whether she will recover or die. This being the case, little confidence can be placed in conclusions as to the effect of treatment based upon a small number of cases. If three or four cases treated in a particular way recovered, before accepting their recovery as the result of treatment we must remember that about 80 per cent. of those suffering from the disease recover under the most different treatments and that therefore the probability is that these three or four patients would have recovered under any treatment not in itself dangerous. The true test of the effect of treatment is the power of predicting its effect. In a case of eclampsia in which the patient is not obviously either dying or recovering we cannot yet predict what the effect of any remedy will be. The next best test is the comparison of large numbers of cases. If a treatment has cured three or four cases it will cure also 300 or 400 cases. I purpose to apply this test to the statement that when the uterus has been emptied the fits at once cease, and to the doctrine that the first thing in treatment is to empty the uterus.

Is it true that the fits cease when the uterus is emptied? Schauta[5] has analysed the records of the second lying-in clinic of Vienna from its foundation in 1834 up to the end of June, 1880. During that period there were 344 patients who suffered from convulsions. Two of these were considered to be cases of ordinary epilepsy and not eclampsia. There remain, therefore, 342 cases of eclampsia. Among these there were 42 in which the fits began during pregnancy, 185 in which they began during labour, and 82 in which the disease appeared after delivery. Now, of the 185 in which the fits began during labour, in how many was the disease "arrested at once" when the uterus was emptied? In 123 the fits continued—in 50 with increased severity and in 38 with lessened severity. In only 62 the fits ceased with delivery. How can the statement that the disease is arrested at once by emptying the uterus be reconciled with these figures?

Schauta quotes a paper by Brummerstadt (and it is also quoted by Dührssen) containing records obtained at Rostock. I have not been able to see the original paper. He out of 63 cases found that the fits ceased after delivery only in 18, became less severe in 17, and continued unaltered in 28. Schauta remarks: "Without doubt this result is contradictory to the result stated in all text-books that attacks beginning during labour cease with delivery or soon afterwards, so that, as a rule, delivery has a favourable influence on eclampsia. My cases show that the attacks in the great majority of cases do not cease with delivery but in a number they continue with greater severity." Schreiber[6] has continued the work of Schauta and has analysed the cases observed in the second Vienna lying-in clinic from 1880, where Schauta left off, up to 1895. During that time there were 137 cases of eclampsia. In 23 of these the attacks began before labour and in 85 before delivery. Among the 23 in which the disease preceded labour the attacks did not occur after delivery in 16. In four they continued after delivery and three patients died undelivered. One of the four in whom they continued after delivery was delivered by the quickest of all ways of emptying the uterus—viz., Cæsarean section. Among the 85 in which the disease supervened during labour, in 47 there were no attacks after delivery and in 38, or 44·7 per cent., they continued. Lantos[7] has analysed the records of the first obstetrical and gynæcological clinic at Budapest, under the direction of Professor von Kezmarszky, from 1863 to 1887. During that time there were 53 cases of eclampsia. In 39 of them the attacks began before delivery and in five before labour. Of the five which began before labour none of the patients had fits after delivery, probably because the disease had had time to run its course. Of the 39 in whom the fits ought to have at once ceased after delivery, in 12, or 30·79 per cent., they continued.

Goldberg[8] has tabulated the cases occurring in the Dresden lying-in hospital during the time that it has been under the supervision of Professor Leopold, from September, 1883, up to June, 1891. In that time there were 81 cases. The notes

[1] A paper read before the Medical Society of London on March 24th, 1902.

[2] Archiv für Gynäkologie, Band lxi.

[3] Des Convulsions chez les Femmes, Paris, 1834.

[4] Klinik der Geburtshülfe und Gynäkologie, Erlangen, 1855.

[5] Archiv für Gynäkologie, Band xviii.

[6] Ibid., Band li.

[7] Ibid., Band xxxii.

[8] Ibid., Band xli. and xlii.

of these cases have evidently been very imperfectly recorded, for in most there is no mention what the effect of delivery was. In 19 it is stated that after delivery there were no more fits; in eight fits continued after delivery. This very fragmentary record is of no value in showing the relative frequency of continuance or cessation of fits, but it is an additional lump of evidence to show that after delivery fits do not "at once cease."

Bidder[9] has examined the records of the St. Petersburg lying-in hospital from Jan. 1st, 1873 to Dec. 31st, 1891. Within this period there occurred 455 cases of eclampsia. The records are imperfect and therefore Bidder is not able to give so full an analysis of his cases as some of the other authors whom I have quoted have done. But he makes some statements which I extract. In 41 cases, in 38 of which the attacks began before labour, the patient had recovered before delivery. In 108, or 33 per cent., the fits ceased with delivery. Then, he says, "comes a series of cases in which one or a few slight attacks occurred after the birth of the child, and in which therefore the favourable effect of delivery was strikingly proved. The number of these is hardly less than that of the first series." The imperfection of the records prevents exact figures from being given. This appears to me to be an example of the fallacious reasoning so often followed by writers on the subject. They forget that four-fifths of the cases of eclampsia end in recovery within a day or two. If the disease begins before labour fits will generally cease before delivery. If it begins early in the first stage of labour the last fit may be before delivery or soon after delivery. The fact that recovery follows delivery does not prove that it is the result of delivery. Bidder's cases include 66 forceps deliveries after which fits ceased and 40 after which they did not cease. After this he goes on to observe, very correctly, although not very consistently with his former reasoning, that if we knew that emptying the uterus would cut short eclampsia Cæsarean section would be good treatment. But he says: "We unfortunately do not know this. We see in a large number of cases attacks that have come on during labour, continue after delivery, and increase in severity and even lead to death by coma without further attacks after delivery."

One of the most energetic champions of operative delivery in eclampsia is Dührssen[10] of Berlin. He has gone through the records of the Charité Hospital in that city from January, 1880, to March, 1892, and has tabulated all the cases of eclampsia, 200 in number. Here also the records are not in every case complete. The figures which bear on the effect of delivery on the disease are as follows. In 65 cases the eclampsia ceased with the emptying of the uterus. In 53 the fits continued after delivery—a rather voluminous exception to the alleged rule that after delivery the fits at once cease. In 40 of the 53 the disease improved after delivery; in 13 it got worse. Zweifel[11] is an ardent partisan of the treatment introduced by Dührssen—that is, rapid delivery by cutting open the genital passage instead of waiting for it to dilate and quickly pulling out the child. Is it the fact that when this is done the fits at once cease? The attacks ceased in 55 per cent.; in 45 per cent. they did not. Glockner[12] has continued Zweifel's work and has analysed the records of the Royal University Women's Clinic at Leipsic from October, 1895, to October, 1900. Within this time 143 cases of eclampsia were observed. What do they teach as to the effect of delivery in checking the fits? The fits ceased after delivery only in 34 per cent. of the cases. But in three cases it was because the patient died; if these are deducted it comes down to 32·4 per cent. The fits continued after delivery in 66 per cent. Olshausen[13] has analysed 200 cases which occurred between September, 1885, and April, 1891, in the Royal University Women's Clinic of Berlin. His figures are not given in full detail. 10 patients died undelivered; 111 were delivered spontaneously; and in 77 delivery was artificially hastened. The effect on the fits is stated in only 143 cases. The fits ceased in 92 and continued in 51. Olshausen assumes that in every case in which the fits either did not recur after delivery or became less severe the recovery was due to delivery. It seems not to have occurred to him that recovery might have been simply the natural course of the disease. Goedecke[14] has continued the work of Olshausen and has analysed 403 cases of eclampsia observed in the Berlin clinic from 1892 to 1899. There were 268 of these which showed the presumed influence of delivery upon the fits. In 160 of them there were no fits after delivery; in 108 the fits continued, or 40·3 per cent. Wieger, whose original paper I have not been able to see, but whose figures are quoted by Dührssen, found that in 111 cases the fits ceased after delivery in 39, became less severe in 35, and continued, or got worse, in 37. Löhlein has analysed 325 cases. I have not been able to see his original paper, so I know not where the cases were observed. I quote from a summary of it given by Dührssen.[15] In 249 the fits began either before or during labour. According to Dührssen the fits either ceased or improved in 80 per cent. As Dührssen in every case in which there was any improvement after delivery gives credit for the improvement to the fact that the uterus had been emptied, this means that in 20 per cent. the patient was either no better after delivery or got worse. Auvard[16] gives statistics from the Paris Maternité from 1850 to 1886. In 179 cases the attacks ceased after delivery in 60 and diminished in 31, while in 88 delivery had no appreciable effect upon them. Stroganoff[17] has published a series of 58 cases without a death. He candidly admits that in previous years there had been a heavy mortality, so that this only represents a fortuitous succession of a number of mild cases. But they illustrate the effect of delivery. He says that in 50 or 60 per cent. the fits cease after delivery.

During the 10 years 1891–1901 38 pregnant women who were suffering from epileptiform convulsions were admitted into the London Hospital. Of the 38, 20 recovered and 18 died. This is a very large mortality but it is partly due to the tendency of general practitioners to send to the hospital those cases that seem likely to end unfavourably. Thus two of the patients were admitted in deep coma and died a few hours after admission. In two others there was reason to believe that the fits were due to cerebral tumours and the cases were therefore not puerperal eclampsia in the proper sense. In one case there was no albumin and there was double optic neuritis. In the other the diagnosis of cerebral tumour had been made two years previously by Hughlings Jackson; but as the symptoms had improved the diagnosis had been thought incorrect. The patient had optic neuritis; there was only a trace of albumin in the urine which contained 2 per cent. of urea. In neither case was there a post-mortem examination, so that the diagnosis remained unconfirmed, but I think neither can be regarded as eclampsia. That the tendency is to send bad cases to the hospital is shown by the statistics of the Glasgow Maternity Hospital during the last 15 years collected by Dr. Munro Kerr, which show a mortality of 47 per cent. Dr. Jardine, from whose paper[18] I quote them, says: "The majority of the patients are sent in after they have been having convulsions for many hours. It is rare for us to get them within 12 hours of the first fit." I have notes of the relation of the fits to delivery in 23 cases. In 18 there were no fits after delivery; in five the fits continued. Of the 18, in seven the fits had ceased long before delivery. In one cessation of the fits followed a dose of morphia. In another the patient was comatose and died in coma without more fits shortly after delivery.

The figures I have quoted will be, perhaps, more easily grasped if I put them together in a tabular form. (See Table I.)

These numerical statements are records of a very large number of cases. Different cases of eclampsia differ much from one another as to the time at which the disease comes on, the number of the fits, and the duration of the attack. Whether or not they cease after delivery depends upon these conditions. In small groups of cases there is often an accidental preponderance of cases of a particular kind, and therefore it is that in some of the cases which I have quoted there is a large proportion, and in others a small proportion, of cases in which the fits persisted or ceased after delivery. But looking at them broadly and seeing in how large a number fits continued after delivery it seems to me that the statement that *when the uterus is emptied the fits at once cease* is one which it is impossible to reconcile with the facts. When the uterus is emptied the fits do *not* at once cease; emptying the uterus is *not* a certain means of checking the fits; when the uterus is emptied the fits often

[9] Ibid., Band xliv.
[10] Ibid., Band xlii.
[11] Centralblatt für Gynäkologie, 1886, No. 46 et seq.
[12] Archiv für Gynäkologie, Band lxiii.
[13] Volkmann's Sammlung, Neue Folge, No. 39.
[14] Zeitschrift für Geburtshülfe und Gynäkologie, Band xlv.
[15] Archiv für Gynäkologie, Band xlii.
[16] Eclampsie Puerpérale, Paris, 1889.
[17] Monatsschrift für Geburtshülfe und Gynäkologie, Band xii.
[18] THE LANCET, June 15th, 1901, p. 1682.

continue—in most cases they get better, in some they get worse. The natural history of the disease should lead us to expect, unless delivery were actually injurious, that 80 per cent. would get better. It may be said, even if the contention that after delivery the fits at once cease be given up, yet it is the fact that speedy delivery is good treatment; that cases treated by accelerating delivery do better than those in which labour is allowed to take its natural course. Let us see if this is so.

TABLE I.—*Showing the Effect of Delivery on the Fits.*

Authority.	Number of cases.	Fits ceased after delivery.	Fits continued after delivery.
Schauta	185	62	123
Brummerstadt	63	18	45
Schreiber	105	63	42
Lantos	44	32	12
Goldberg	81	19	8
Bidder	455	108 (33%)	—
,, (forceps cases)	—	66	40
Dührssen	100	65	53
Zweifel	129	55%	45%
Glockner	141	48 (34%)	93 (66%)
Olshausen	143	92	51
Wieger	111	39	72
Auvard	179	60	119
Goedecke	268	160	108
Herman	38	18	5

Goldberg, in the papers which I have already referred to, gives the result in his 81 cases. The death-rate among the whole was 24·7 per cent. Among those patients delivered by operation it was 34·21 per cent. Among those naturally delivered it was 16·28 per cent. The whole mortality in Dührssen's cases was 21 per cent. The mortality among those in whom the disease began before delivery was 23·7 per cent. Dührssen thinks that three of the deaths occurred from sepsis and therefore ought to be deducted. If this be allowed it brings the mortality down to 19·8 per cent. for the whole number and 22·7 per cent. for those in which the disease began before delivery. In 80 of Dührssen's cases delivery was artificially accelerated and in these the mortality was 23·75 per cent. In 30 delivery was allowed to take place spontaneously and among them the mortality was 21 per cent. The total mortality in Lantos's cases was 28·3 per cent. Of the 44 in which the disease came on before delivery, in 33 delivery was accelerated and in 11 it was left to nature. Of the former cases 11 patients died and of the latter two died. In other words, emptying the uterus was followed by 33 per cent. of deaths; letting it alone by 18 per cent. The total mortality in the cases collected by Schreiber was 19·7 per cent. The mortality among those delivered by operation was 19·23 per cent. and among those spontaneously delivered 20·3 per cent.—an insignificant difference.

Zweifel writes as one convinced of the good results of Dührssen's practice of delivering by extensive incisions into the cervix and vagina. He tells us that the cases treated by him fall naturally into two groups, one from April, 1877, to the beginning of 1892, during which the principle of treatment was expectant; and the second from the beginning of 1892 onwards, in which Dührssen's practice was followed. The first set of cases numbered 49, with 16 deaths, and the second 80, with 12 deaths—a death-rate of 32·6 per cent. by expectant treatment, against 15 per cent. by active treatment. This looks convincing until one examines the records of the actual cases. I then find that in the first, or the period of expectant treatment, many patients were treated by rapid delivery, either by forceps, turning, or craniotomy; and that in the figures are included patients who died undelivered and cases in which the convulsions began after delivery. I find also that in the second period, or that of active treatment, not all were delivered rapidly—that there were patients who died undelivered and whose fits began after delivery. And in both sections there are a number as to whom there is no record how they were delivered. The latter are numerous enough to prevent any numerical statement of the results of different modes of delivery. One patient was delivered by the most rapid of all methods—Cæsarean section—and had 30 fits after delivery. Zweifel remarks that the preparation of his statistical account of his cases has shown him how difficult it is to prove things by figures and how difficult it is to guard oneself from false conclusions. Even if one is careful to keep in memory the impression derived from individual cases, yet one finds the impressions of experience greatly upset by numerical test. The total mortality among the cases analysed by Glockner, after deducting that of one patient who was brought in dead and that of another who died a few minutes after admission, was 17·24 per cent. But Glockner says that there were three others who were moribund when admitted, and these should be deducted; the mortality is then reduced to 15·49 per cent. 114 of his patients were delivered by operation and the mortality among these was 17·5 per cent. Only 10 cases were left to nature and three of the patients died, a mortality of 33 per cent. But I presume that the moribund patients were not delivered by operation and only two died undelivered; so if we deduct the third moribund patient the mortality comes down to 20 per cent., nearly the same as that of the operative delivery. In some patients dilatation of the soft parts as a preliminary to operative delivery was not practised, I presume because it was not required. In others dilatation was effected slowly by dilating bags, in others rapidly by incisions, as recommended by Dührssen, and in others by the combination of incisions and dilatation. The object of the incisions is to empty the uterus as quickly as possible. Incisions were used in 46 cases, with 12 deaths, or 26 per cent. They were not used in 48; and in these there were only eight deaths, or 16·6 per cent. In Olshausen's collection of cases the difference between the results of natural and accelerated delivery is so slight as to be practically nothing. In 111 natural deliveries there were 24 deaths, or 21·6 per cent. In 77 operative deliveries there were 16 deaths, or 20·8 per cent. Among Goedecke's cases there were 192 in which delivery was accelerated by operation. The mortality among these was 16·1 per cent. The mortality among the whole 403 cases was 16·9 per cent. G. Veit[19] has tabulated 802 cases collected from different maternities. I use his figures for convenience, although they include some that I have already quoted. Of the 802 patients 446 were delivered by operation of some sort, with 114 deaths, a mortality of 25·5 per cent. 356 were not delivered by operation, and of them 74 died, or 20·8 per cent. I will put these figures together in a tabular form so that they may be more easily seen.

Authority.	Natural delivery.	Accelerated delivery.
Goldberg	16·28 per cent.	34·21 per cent.
Dührssen	21·0 ,,	23·75 ,,
Lantos	18·0 ,,	33·0 ,,
Schreiber	20·3 ,,	19·23 ,,
Glockner	20·6 ,,	17·5 ,,
Olshausen	21·6 ,,	20·8 ,,
Schauta	26·0 ,,	43·0 ,,
G. Veit	20·0 ,,	25·5 ,,

It may be said—and I think the objection a fair one—that the figures showing a very high mortality among the patients delivered by operation are taken from pre-antiseptic times and apply not to operative delivery under present-day conditions. This may be so; and I grant that operative delivery performed skilfully under anæsthesia and with antiseptic care is not likely to prove fatal, to aggravate the disease, or seriously to injure the patient. But if it were the fact that "delivery by the most rapid means consistent with safety" was the first, the most important, thing in treatment, then every accoucheur and midwife ought to do his or her best to hurry on delivery, no matter what the skill or experience of the operator, what the surroundings of the patient, or what the amount and kind of assistance at hand; and if this were acted on I think that in some places operative delivery would have a higher mortality than delivery left to nature. I take the very best results of operative delivery as compared with leaving delivery to nature and

[19] Comptes Rendus du Congrès International de Gynécologie et d'Obstétrique, Genève, 1897.

what do they come to? A difference in the mortality of 1 or 2 per cent. only. What surgeon would recommend an operation if all he could say in its favour was that his patient's chance of recovery was about 2 per cent. better if he had the operation done than if he were let alone? I submit that immediate delivery is *not* the first thing in treatment; that if it is beneficial the benefit is of the most trifling kind, so small as to be doubtful. The practice is one based upon theory, not upon experience. The advantage is so small that if hurried delivery were indiscriminately practised by all who attend labour, in all circumstances, the mortality arising from operative delivery would soon overbalance the trifling and doubtful benefit of emptying the uterus. I therefore think that the teaching that to empty the uterus quickly is the first thing in treatment is bad, because likely to lead to bad results.

If rapid delivery were the one thing needful in eclampsia, if it were the fact that emptying the uterus at once caused the fits to cease, Cæsarean section would unquestionably be the proper treatment. No other method of delivery is so prompt. Rupturing the membranes and dilating the cervix with tents and water-bags are procrastination in comparison with it. Those who have hurried delivery by the incisions into the cervix and vagina recommended by Dührssen have generally not made them until the cervical canal has been obliterated. If the internal os has not been dilated it appears to have been the practice to open it up with tents or dilators and then to hasten delivery by incisions. This is a far slower proceeding than Cæsarean section. It may be urged that if Dührssen's principles are applied to the full, and the lower segment of the uterus and vagina are cut open enough to allow the extraction of the child without waiting for dilatation, then delivery by the natural road may be accomplished as quickly as Cæsarean section. Possibly it may, but as yet it is not certain that vaginal Cæsarean section is less dangerous than the old Cæsarean section. Zweifel gives as a reason for preferring Dührssen's incisions that although Cæsarean section is a quicker method of delivery, yet the preparations take time. I see not why the antiseptic preparation of operator, instruments, and patient should take longer for one operation than the other. Döderlein gives as a reason against Dührssen's treatment that it is such a bloody and formidable thing that it cannot be done in private practice.

What are the facts as to Cæsarean section? Döderlein [20] has collected reports of 19 cases in which patients suffering from eclampsia were delivered by Cæsarean section. Of these 11 recovered and eight died. In 14 there were no more fits after delivery; in five the fits continued. In two of the cases the reason why there were no more fits was that the patients were moribund when the operation was done and died shortly afterwards; one of these had had no fit for 12 hours before the operation. It is to be noted, also, that eight of the patients whose fits ceased and four of those in whom they continued had been treated by morphia. There are to be added to these the since published cases of Schreiber, in which the fits continued, and of Zweifel, in which there were 30 fits after delivery. Here we have the effect of the most rapid possible delivery, 12 cases in which it is possible to think that rapid delivery did good and seven in which it clearly did not.

Hillmann [21] has collected the records of Cæsarean section for eclampsia down to a more recent date. He finds 39 cases with 20 deaths. Of 41 children 18 died and 23 survived. In eight cases fits occurred after Cæsarean section.[22] I think such a proportion as this makes the evidence in favour of the good effect of delivery far from decisive. I may also remark that Cæsarean section generally involves free bleeding which our forefathers held was the sheet-anchor of treatment in eclampsia.

The result of the foregoing part of my paper has been purely negative. If I have been successful in my contention I have shown reason for thinking that a method of treatment widely recommended is not beneficial and certainly not so beneficial as its advocates say. I now come to a more pleasing topic. I have a case to relate in which the prognosis appeared to be very bad but the patient nevertheless recovered, and there was reason to think that treatment may have had something to do with her recovery. It is well known that some cases of eclampsia die with a steadily rising temperature. It is, I think, the experience of most that a very high temperature and a very quick pulse are of unfavourable import in the prognosis of eclampsia. If a patient is dying with a rapidly rising temperature it seems to me rational treatment to try to bring down that temperature. I believe it to be the opinion of general physicians that the most powerful and most safe way of lowering the heat of the body is to abstract heat by the cold or tepid bath. The use of baths in renal disease generally, in the renal disease of pregnancy, and in eclampsia, as a means of promoting diaphoresis, is no novelty. It is a practice that can do little harm and may do good. But this I am not going to discuss. I report a case in which the tepid bath was used for the purpose of bringing down temperature and in which it did bring down the temperature, and it may have been the agent which brought about recovery.

The patient was admitted into the London Hospital on April 6th, 1901. Her age was 20 years. She had never been ill before and was in the seventh month of her first pregnancy. She had sent for her medical attendant, Mr. S. R. Nicholls, at 12.30 A.M. because she had abdominal pain and vomiting. The bowels were confined, the temperature was normal, the patient had had no fit, and there was no vaginal discharge. A purge was prescribed. The medical attendant was summoned again at 4 A.M. because the patient's mother thought that she had had a fit, but the patient was quiet when seen. A simple enema was advised. At 8 A.M. the patient had an epileptiform fit. There was then no vaginal discharge, the temperature was normal, and the bowels had acted. A large injection of saline fluid into the rectum was ordered. Fits recurred, at first about once in every hour, then more frequently. At 8.30 P.M. the patient was admitted into the hospital (the notes of the case were taken by Dr. F. P. T. Hilliard, resident accoucheur, and Mr. G. S. Ward, clinical clerk). A hypodermic injection of a quarter of a grain of morphia was given at once. Soon after the patient had a fit and another injection of a quarter of a grain of morphia was given. The patient was comatose. The temperature was 104·8° F. and the pulse was 174. The pupils were small. There was slight œdema of the legs. About an ounce of urine was withdrawn and was found to be almost solid with albumin. The fœtal heart was not heard. The patient was put in a warm bath, which was rapidly cooled down to about 80°. She was kept in it for about 25 minutes, by which time her temperature had come down to 102°. The pulse became of lower tension. After being taken out of the bath the patient was wrapped in flannels and was allowed to perspire. At 11 P.M. she had a slight fit and soon afterwards she aborted. The fœtus was normal in appearance, not decomposing. On the 7th the temperature was normal. During the 8th and 9th it rose slightly, reaching 101° on the latter day. Next day it fell and was not afterwards above normal. She was very restless and her mental condition was not good. By the 20th she was so violent that she had to be removed to the workhouse infirmary and thence she was taken to the County Asylum at Brentford. Owing to the patient's condition it was very difficult to examine thoroughly the retina, but there were no hæmorrhages in the parts seen. When admitted urine appeared to be passed unconsciously. About an ounce was withdrawn by catheter which was almost solid with albumin. On the 8th twelve ounces of urine were collected, but the bowels acted four times and some urine was lost with the stools. It was thick with a deposit of urates. The albumin was almost entirely paraglobulin. The specific gravity of the urine was 1028; it contained 3 per cent. of urea. On the 9th 58 ounces of urine of specific gravity 1024 were collected. There was a deposit of urates. It contained 3·4 per cent. of urea and about one-eighth of albumin, about half of which was paraglobulin. By the 16th the albumin had diminished to one-twentieth and it contained only a trace of paraglobulin. On May 26th Mr. E. Vallance (medical officer to the West Ham Workhouse Infirmary) reported the urine to be free from albumin.

One case proves nothing. But I think that this was one in which anyone who ventured on a prognosis would have given an unfavourable one. I have seen one other case which has led me to think this practice a good one; but it occurred in private practice and therefore I have no detailed notes about it. The patient during the lying-in period suffered from almost complete suppression of urine—about one and a half ounces

[20] Münchener Medicinische Wochenschrift, 1894, No. 26.
[21] Monatsschrift für Geburtshülfe und Gynäkologie, Band x., 1899.
[22] Hillmann says 40, but he includes one post-mortem section. He says that in seven the fits continued, but Zweifel's case makes seven, and another is later in date.

were drawn off after she had passed none for 24 hours—which was solid with albumin. There were stupor and some muscular twitchings, but no actual fit, and the temperature was 105° F. I advised that the tepid bath should be used to reduce the temperature. This was done, the temperature was reduced, the symptoms were at once much relieved, and the patient ultimately recovered.

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SMALL-POX HOSPITALS AND THE SPREAD OF INFECTION.[1]

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THE prevalence of small-pox in London and its consequent spread into the county of Essex have naturally caused me to give a considerable amount of attention to this disease in order that I could advise the various authorities in the county how to deal with any cases which might be introduced.

As there is a population approaching half a million in the portion of the county abutting upon the East-end of London, and as this population consists chiefly of working people residing in somewhat crowded cottages, one would naturally expect that it would be in these densely-populated suburbs that the disease would be most likely to become epidemic. Previous experience in the county, however, had led me to doubt whether the suburbs were the vulnerable point. During the epidemic of 1893–95 it was observed that the much more thinly-populated district included in the Orsett Union suffered far more in proportion than any other part of the county, and my investigation of the cases which occurred there had led me to infer that most of the primary cases had been infected from the small-pox ships of the Metropolitan Asylums Board, which are anchored in the Thames opposite Purfleet. A map showing the position of these ships with reference to Purfleet and the Orsett Union was published in THE LANCET of Feb. 22nd, 1902, p. 496. It was found that there was a certain amount of intercommunication between the ships and the Essex shore, and this afforded a possible explanation of the introduction of the disease, although it was not traceable. It sufficed, however, as an explanation to those who did not believe in the air-borne theory of conveyance of infection, but at the request of the Essex County Council the Metropolitan Asylums Board undertook to alter their arrangements so that all communication with the Essex shore should be prevented, so far as lay in their power, and I am convinced that there has subsequently been no personal communication between the ships and the county, save probably a very occasional surreptitious visit, as of a man to his sweetheart. The only case of this kind that I can hear of has been denied by the parties concerned. Dr. John C. McVail, in his paper on the Aerial Convection of Small-pox from Hospitals, read before the Epidemiological Society during the session 1893–94, has discussed so fully the possible effect of the removal of patients, movements of medical officers, nurses, and workpeople on the inhabitants around that I purpose only referring to these dangers in so far as they have come under my personal observation during the present outbreak in Essex.

Removal of patients to hospital.—Where an isolation hospital is established one or more persons must be employed in the removal of patients and the ambulance must pass along streets and highways. I have not, however, yet met with a case which I could attribute to infection from this vehicle; and along the routes to two of the hospitals in this county which have received hundreds of cases I have not found any indications of the disease being spread in this manner, though I am not prepared to say that such is impossible. The driver of one ambulance who unfortunately was not revaccinated contracted the disease. The danger arising from the removal of patients, provided every care is taken, is, in my opinion, infinitesimal.

Visit of friends.—Persons visiting relatives or friends in a small-pox hospital often contract the disease. Cases arising from this cause have occurred in connexion with two hospitals in the county and several persons living in the county who have visited at the hospital ships have been attacked.

Intercourse of staff with persons outside.—No case has come under my notice of infection being conveyed outside by medical attendants, nurses, or other members of the staff of any hospital in the county; but one case has come to my knowledge where small-pox occurred in a house to which a nurse had sent a cloak. Where proper precautions are observed this danger is obviously not great and in my opinion it has been greatly exaggerated by persons opposed to the air-borne theory and by medical men and others who have little or no experience in connexion with small-pox hospitals. In my opinion it offers no explanation of the prevalence of the disease in the proximity of a properly managed hospital.

Workmen employed near a small-pox hospital.—It is practically impossible to provide a permanent hospital sufficiently large to cope with any outbreak which may occur; hence in many cases temporary buildings have to be erected in proximity to the permanent hospital whilst the latter in full of patients. Amongst persons so employed infection is very frequent and occasionally such workmen have introduced the disease into their families, although they themselves have not been attacked—that is, they have been the intermediaries for the conveyance of the infection. [Dr. Thresh here gave references to about 150 instances. He continued:] Several metropolitan borough medical officers of health have informed me that cases have arisen in their districts amongst workmen employed at these temporary hospitals and amongst their families. The total number of the cases due directly and indirectly to this cause may never be known, but certain it is that these men are spreading the disease broadcast through the districts to the East of London. I have not heard of or observed any similar results ensuing amongst men engaged erecting temporary hospitals for other diseases; and from our knowledge of such diseases as scarlet fever, diphtheria, and typhoid fever we should not expect to find infection spread in this manner.

Doubtless direct infection is responsible for a certain number of cases; but it appears certain that most of the infected persons have never come in contact with any patient and that some other explanation is necessary to account for the large number of cases which occur. This factor is the conveyance through the air of the infective material from the patients in the hospital to the persons around. That infection can take place without actual personal contact is generally, if not universally, admitted; but whilst some would limit the "striking" distance to a few feet, others will extend it to hundreds of yards. This brings me to the most important part of my subject; the aerial conveyance of infection from small-pox hospitals.

Aerial conveyance of infection.—In 1894 Dr. McVail, in the paper already referred to, stated that his purpose was "rather to review existing knowledge than to adduce new facts," and in his admirable and instructive review he showed that this was no new theory but one which had been frequently discussed during the last 100 years. In fact, wherever there has been a large aggregation of persons suffering from small-pox cases appear to have occurred amongst the inhabitants around which could only be accounted for by the infection being air-borne. After considering the arguments for and against aerial convection he says: "Summing up the evidence, as far as it is possible to sum up on a subject as to which so much is still to be learned, we seem to reach the general conclusion that, as a result of the simultaneous action of causes favourable to the spread of infection, the contagium of small-pox may be conveyed atmospherically to a distance much greater than had been usually admitted—a distance measurable by quarters of miles." He also adds: "The practical conclusion of this whole question may be said to have already been arrived at. Small-pox hospitals are not now erected in the midst of towns and those already in existence are being more and more sparingly used. Indeed, when the power of aerial convection is still doubted, it seems to be assumed that the prevention of personal communication is impracticable and that accidents incident to the system of hospital treatment of small-pox within populous districts must be accepted as inevitable, so that the only remedy under the one theory, as under the other, is the removal of such institutions to a distance from populous places."

I differ from Dr. McVail, however, in not believing that the practical conclusion has been arrived at. It is probably not sufficient in all cases to place such institutions at a

[1] Abstract of a paper read before the Epidemiological Society on April 18th, 1902.

distance from populous places. It may be necessary to avoid having large institutions, with consequent large concentration of patients, and therefore of infective material, by substituting for these a number of smaller hospitals, or a number of tent encampments, in which this concentration of infection cannot occur, or occurs to such an extent only as to reduce the danger of the dissemination of the disease to a minimum. Small-pox hospitals do not necessarily cause widespread prevalence amongst the population around; on the other hand, they may spread the disease over a greater area than is generally conceived. The experience in Essex during the present epidemic has been particularly interesting and will probably tend to throw a little more light on some points of this much-discussed question of aerial conveyance of infection. During this and previous epidemics I have seen a number of cases isolated in their own homes without any spread of infection, either among the inmates of the respective houses or amongst the neighbours where the house has been one of a row or group. In most of these cases revaccination has been submitted to by the other inmates of the houses, not always by all the inmates, and generally by very few of the neighbours. My experience has not led me to recommend the county council to urge the provision of a few large hospitals to serve the whole county, but rather to urge each district to provide temporary accommodation for such cases as may occur, and I always recommend the use of tents. Throughout this epidemic I have had charge of three such hospitals, and I have on previous occasions had charge of similar ones in which from one to eight cases have been treated at a time, and there has never been the slightest reason to believe that any person has been infected from such hospitals, although they have sometimes been near groups of houses or populous villages. With large hospitals my experience has been somewhat different. To take first the Orsett Hospital, which serves the Orsett Union, comprising the Orsett rural district and Grays urban district, this hospital was originally erected for small-pox in consequence of the prevalence of this disease in the district during the epidemic of 1884, when the cases from London were first sent down in any number to the hospital ships in the Thames. After this epidemic had ceased it remained unused so long that the authorities decided to use it for infectious diseases generally and it was being so used when small-pox broke out in London last year. Directly cases began to occur in Purfleet the patients in the hospital were removed and the small-pox cases taken in. About 20 beds were available, but cases cropped up so rapidly that additional accommodation had to be provided in the shape of wood and iron buildings and hospital tents. The maximum number of patients in the hospital at one time was over 100 and they certainly were crowded together more than was desirable. Several workmen engaged on the temporary buildings were attacked with the disease, but only one other person working or living near was infected, so far as I can learn. The hospital, however, is on fairly high ground and very isolated. There appears to be only one house within a quarter of a mile and only three or four between a quarter and half a mile, the same number between half and three-quarters of a mile, and only one small group of houses just within the mile. Beyond this limit lies the town of Grays, nearly the whole of which lies within the one and a half miles radius. The distribution of small-pox in the parishes around does not appear to indicate that this hospital has had anything to do with the aerial dissemination of infection, but it is just possible that the influence, if any, is masked by the effect of other and more important factors.

The small-pox hospital at Dagenham is much more important than that at Orsett. It is a properly-equipped hospital, with 60 beds and an administrative block sufficiently large to serve a hospital three or four times the size. It was provided to serve a population of over half a million. It stands in the centre of a large estate owned by the West Ham Corporation and though not so isolated as the Orsett Hospital the nearest village, Dagenham, is beyond the half-mile radius. The spread of small-pox in West Ham and other districts connected with this hospital has recently been so rapid that temporary buildings have had to be run up as quickly as possible. At my last visit (April 2nd) there were 350 patients and 40 more were waiting for admission. As I have already remarked, a number of persons working here have been infected, and there is considerable communication with the village of Dagenham, in which is the nearest railway station. Up to the present there has been no epidemic prevalence in this parish, but two cases occurred there in January, two in February, and seven in March; and it is very probable that the influence of the hospital is beginning to make itself felt. The progress of events is being carefully watched and the results will be fully noted. Already the proportion of cases to population is higher in Dagenham than in any other town or village in the Romford Union, save that of Rainham, but as yet it would be unsafe to draw any inferences.

The hospital ships of the Metropolitan Asylums Board, with reference to which I have already contributed an article to THE LANCET, lie just outside the county in the Thames. They were placed opposite Purfleet in 1884 and since that time there has been an excessive prevalence of small-pox in the Orsett district and especially in that portion lying nearest the ships. Prior to these floating hospitals being established near Purfleet small-pox was little more prevalent in the Orsett district than in the remainder of the county and only from one-third to one-fourth as prevalent as in the metropolis. The change since then has been most marked, for on the same basis the disease has been seven times more prevalent in Orsett than in the remainder of the county and two and a half times more prevalent than in London. Out of the 85 cases which occurred in the whole of the Orsett Union, with a population of over 27,000, no less than 39 occurred in West Thurrock, the parish opposite the small-pox ships with a population of only 2540. This means that the disease was nine times more prevalent in West Thurrock than in the remainder of the union. Comparing West Thurrock parish only with the other rural portions of the union the excessive prevalence is far more marked. Out of a population of 12,500 in these parishes there were only eight cases, whereas, as I have said, there were 39 cases amongst the population of 2540 in West Thurrock, the proportion being 26 times greater in the parish opposite the ships. That the proximity of the ships was in some way the cause of this excessive prevalence I was convinced at the time of the outbreak; but inasmuch as there was a certain amount of intercommunication between the ships and West Thurrock there was left room for doubt as to the mode in which the contagion was conveyed—a doubt which was taken advantage of by those who did not believe in the theory of aerial convection. As this intercommunication has been entirely cut off the outbreak of small-pox in the Orsett Union, which commenced in September, 1901, is well worthy of study. Many of the factors which have complicated the investigations of the prevalence of small-pox in the neighbourhood of other hospitals are absent and the study is greatly simplified. At the end of August the number of cases in the small-pox ships was 72, a greater number than had been under treatment at one time since the epidemic of 1894. The first case in the Orsett district was notified on or about this date and the patient worked on the railway at Purfleet, at the nearest point to the hospital ships, but resided in Grays. In the eight months during which the disease has been prevalent in the county the attack-rate per 1000 inhabitants has been as under: in Grays Urban District, 11·4, or a ratio of 19; in the Orsett Rural District, 14·4, or a ratio of 24; in the Orsett Union, 13·1, or a ratio of 22; and in the remainder of the county, 0·6, or a ratio of 1. The ratio shows that small-pox during this epidemic, up to the end of March, has been 22 times more prevalent in the Orsett Union than in the remainder of the county and that the incidence has been greater in the thinly-populated rural portion than in the urban portion of that union. Until last month (March) the disease did not show any tendency to become epidemic in any other district than Orsett, notwithstanding that it was being almost daily introduced from London, Dartford, and elsewhere, into the teeming population adjoining West Ham and the East and North-east of London.

Having demonstrated that the Orsett Union was the first part of the county to be invaded and the only part as yet which has suffered from any epidemic prevalence, the distribution of the disease in the various parts of that union may be considered. The district comprises 18 parishes and in these there were 438 small-pox notifications from August, 1901, to April, 1902, both inclusive, presenting the remarkable feature that no less than 117 out of the 438 cases occurred in one parish and that parish (West Thurrock) is the one nearest the hospital ships. This gives 117 casef amongst a population of 2585, against 321 in a population os 30,578. The attack-rate per 1000 of population has been as

under: in West Thurrock, 45; in the remainder of Orsett Union, 10·5; or four and a half times higher in West Thurrock than in the remainder of the district.

Most of the cases at Tilbury are directly traceable to personal infection and the outbreak is one of the ordinary character. The patients are either dock labourers or members of such families, and the infection once being introduced into their crowded dwellings the extension of the disease presents nothing remarkable. West Thurrock, however, has a working-class population of better character. It is a large parish, its area being 2898 acres, giving more than one acre to each inhabitant, and from east to west extends for a distance of three miles. It is necessary, therefore, to consider further the distribution of the disease within the parish. The hospital ships are situated 700 yards from the nearest portion of the parish and right opposite them is a small hamlet called Purfleet. This hamlet is exactly included in the three-quarter mile radius from the ships. Between this and the two-mile radius the population is very scattered and few in number but just beyond this radius lies what may be called the village of West Thurrock.

The hamlet of Purfleet comprises 110 houses, chiefly cottages, and the population, according to a census taken by Mr. G. Sowden, M.R.C.S. Eng., my assistant, is 479. In Purfleet there have been 47 cases of small-pox and in the remainder of West Thurrock (chiefly in the village two miles away) 70 cases. The attack-rate in the two portions is therefore as under: in Purfleet hamlet 100 per 1000 population and in West Thurrock village 33 per 1000 population. In other words, small-pox has been more than three times more prevalent in Purfleet than in the remainder of the parish. Just within and on the border of this three-mile radius lie also the populous portions of the parishes of Aveley and Stifford. In these parishes (about equally affected) there have been 49 cases amongst a population of 2136, giving an attack-rate of 23 per 1000.

Between the third-mile and the fourth-mile radius lie the town of Grays and the village of South Ockenden. These together have a population of 14,890, and amongst this population there have been 188 cases of small-pox, equal to an attack-rate of 12·6 per 1000. Beyond this four-mile limit lie the remainder of the population of the Orsett Union, numbering 13,552, and amongst these there have only been 84 cases, equivalent to 6 per 1000 population.

Summarised, the results obtained are as follows: attack-rate per 1000 population: between the 700 yards and three-quarter mile radius, 100; between the three-quarter mile and three-mile radius, in West Thurrock 33, and in Aveley and Stifford 23; between the three-mile and four-mile radius, 19·5; beyond the four-mile radius, 6.

Strong as are these proofs of the effect of the proximity of the hospital ships they can be further strengthened by a consideration of the effect of prevalent winds. By far the most prevalent winds during the past eight months have been from south-west and west-south-west, blowing from the ships over the south portion of Purfleet hamlet; hence, if the infection is carried by the air, we should expect to find that the great majority of the cases of small-pox would be in South Purfleet. This is exactly what has occurred. West Purfleet has almost entirely escaped whilst South Purfleet has been more than decimated. The two portions of this hamlet are entirely separate, the one lying to the west of the London, Tilbury, and Southend Railway, and the other to the south, the railway describing a curve equivalent to a right angle between the two parts. There is an interval of about one-quarter of a mile between West Purfleet and South Purfleet, upon which there are very few houses. In West Purfleet, with a population of 137, there have been only two cases, whereas in South Purfleet, with a population of 342, there have been 45 cases. The attack-rate in South Purfleet has been 131 per 1000 and in West Purfleet 15 per 1000.

The statistical evidence in favour of there being some central focus of infection appears quite conclusive and confirms the results of inquiries made by myself and my assistants in the district concerned. How can the peculiar incidence of the disease—not only in this but in the preceding epidemic—be explained if the factor of the presence of the hospital ships is not of primary importance? I do not for a moment contend that all the persons attacked have been directly infected from the hospital ships. A large number of cases could be traced to direct personal infection, especially in the portions of the district more remote from Purfleet, but many of these could be ultimately traced to Purfleet. Again, it has been urged that the facts that no cases have occurred amongst the garrison at West Purfleet, or amongst the lads on board the training-ship *Cornwall*, which are both within the three-quarter mile radius of the ships, prove that the infection is not air-borne. The reason is very simple. The barracks lie to the extreme north of Purfleet, in the portion where only two cases of small-pox have occurred; but the immunity of the garrison is due not so much to the position of the barracks as to the fact that every inmate has been revaccinated save a few who had small-pox previously to the present outbreak. These persons are therefore all immunised and had any cases occurred our surprise would have been great. On board the training-ship there are 270 persons, all over 12 years of age. Here, again, there is a community protected by revaccination but probably not so completely protected as the garrison, as cases of small-pox have occurred on board this vessel which could not be definitely accounted for. In one case a lad who had not been off the ship for eight months was attacked and in the other case the patient was one of the staff. The immunity of the persons residing in the garrison and training-ship is a very powerful argument in favour of revaccination but has no bearing whatever upon the question of air-borne infection from the small-pox ships.

As the result of my investigations the conclusions arrived at are as follows:—1. That amongst the cases which occurred in Purfleet, both in the present and preceding epidemic, there was a large proportion which could not be traced to pre-existing cases. 2. That all the usual factors tending to produce epidemic prevalence of small-pox were present in the Orsett Union with the addition (save in the case of Purfleet) of an unusually large proportion of unvaccinated children under 10 years of age. 3. That none of these usual factors are capable of explaining the peculiar distribution of the disease during the epidemics investigated. 4. That all the results point to some central continuous focus of infection corresponding exactly in position with the small-pox ships. 5. That most careful inquiry fails to show any means whereby this continuous flow of infection can occur except on the hypothesis that it is air-borne.

The extent of the area around a small-pox hospital which may be affected directly and indirectly by the hospital is apparently much larger than has hitherto been supposed. In the case of the ships lying off Purfleet the influence is probably being felt at a distance of fully three miles, and the presence of a belt of water half a mile in width is powerless to arrest the contagion. There can be no doubt that the danger increases with the increase of the number of acute cases in the hospital, the infectivity not being marked until a certain degree of concentration is reached, and with the proximity to the hospital. With a small hospital, say one constructed for from 10 to 20 or 30 cases, my impression is that there is but little danger of the disease being spread therefrom, providing the site is such as corresponds to the requirements of the Local Government Board; but the danger cannot be said to be non-existent. With hospitals having 100 or more beds the danger is naturally much greater, and when we come to hospitals of the size of those required to cope with an epidemic in a large city the peril may be great indeed.

If the Government would learn the lesson taught by this epidemic and render absolutely compulsory the vaccination of all infants and the revaccination of all children between the ages of 10 and 12 years small-pox would speedily disappear and hospitals for the isolation of patients suffering from the disease would no longer be necessary. Until this is done authorities establishing hospitals outside their own districts might fairly be held responsible for all cases which occur within a certain area around and for all other cases which can be directly traced to infection from the hospital. The only exceptions should be outbreaks which could be definitely traced to some other cause than the presence of the hospital. The aggregation of a large number of cases on a limited area is also, in my opinion, a danger to the patients themselves. They are surrounded by an intensely infected atmosphere which must retard their recovery and tend to produce fatal results.

My idea of isolation on a large scale is the provision of permanent administrative buildings and the scattering of the patients over a large area in properly constructed and equipped marquees. The erection of these during an epidemic would involve the employment of the minimum number of men and the expenditure of the minimum amount of money. An area like that of Canvey Island

would serve for London, and probably the spreading-out of the hospital over a large area and the prevention of any concentration of the infection by using tents, none containing more than, say, 40 patients, would more or less completely prevent the infection being air-borne and so obviate the disastrous effects of the present arrangements. Schemes for cremating the infective material in the air from hospitals are, in my opinion, impossible of successful execution. Certainly none of the plans recently suggested to me by enthusiastic inventors and others are at all practicable.

Chelmsford.

A CASE OF SUBCUTANEOUS MYIASIS.

BY EDWARD B. HECTOR, M.B., C.M. EDIN.

CASES of the above description are, I believe, sufficiently rare in this country to warrant me in sending the following notes of a instance which recently came under my notice.

My patient was a lad, six and a half years of age, of respectable parentage, who had been in good health before the symptoms presented themselves. He had been well cared for and had not been suffering from any scratch or wound of any kind. At the time of the supposed insertion of the ova under his skin he had been staying at a farmhouse in a country district some miles from this place. About the end of last November he came under my care on account of a hard, tender swelling on the back of his neck, which gave him pain in movement of his head or left arm. This swelling, which at the time was thought to be due to some slight injury of muscle caused by turning somersaults amongst hay, disappeared after a few days. No abrasion or other injury of the skin was observed. On Dec. 12th he was brought to me by his father's housekeeper who showed me a maggot which had come from what had been taken to be a boil on his head. The hole from which the larva had emerged was over the left parietal eminence and a few drops of pus could be squeezed out of the orifice. On the next day the parotid gland was swollen and inflamed, interfering with the movements of the jaw, and on the following day there was marked œdema of both eyelids, also on the left side, followed by ecchymosis of the lids which took nearly a week to disappear and gave the lad exactly the appearance of having had a severe blow on the eye. On the 16th a second larva was squeezed out of a small swelling at the end of the coronal suture, on the left side as before. On the 17th a painful swelling was noticed over the mastoid process, on the right side this time, from which, three days later, a third larva was removed. At this stage an attack of varicella complicated matters and raised his temperature, which had up to now remained normal, as it continued to do after the temporary rise during the varicella. On the 22nd a diffused swelling appeared over the left temple and on the following day a fourth larva was pressed out from a projecting point a little above the left ear. On the 30th a fifth maggot was removed from a similar swelling just over the outer angle of the right eye. The glands on the left side of the neck had been more or less swollen throughout and those in the axilla, particularly on the left side, were much swollen—one was of the size of a pigeon's egg—and tender. The lad's general health did not suffer greatly while he was passing through so novel an experience. The appearance of each larva was preceded by intense pain over the site of its subsequent exit along with an œdematous swelling over a limited area—of about the size of a bean—which, usually in two days, showed a sharp point from which by slight pressure the maggot could be easily extruded. A few drops of pus invariably accompanied its appearance and the thinning of the skin was evidently due to this small amount of suppuration rather than to any activity on the part of the larvæ. The ecchymosis of the left eye, however, I thought might have been due to some injury to a small vein during the migration of a larva from one place to another. The larvæ were all of the same size, 1·2 centimetres in length and about the thickness of whipcord, white in colour with a black dot at one end, containing 12 segments, and none of them showed any movement after expression from the skin. An effort was made to have the larva identified but without success. Its appearance and its powers of migration, as shown by the wide separation of its points of exit, seemed to differentiate it from the larva of the warbles of cattle, while the larvæ of the fly in sheep appear to gain entrance to the body only from a pre-existing sore.

An interesting fact in connexion with the case, to which my attention was drawn by a medical relative of the lad, is that an aunt of the boy who had lately returned from Uganda, in which district, I believe, such cases are common enough, unpacked her luggage in the house in which the boy was living at the time. This friend suggested that the fly may really not have been one of our native flies at all but one which had been imported amongst the clothing or luggage. The peculiar migration of the larvæ from the original point of insertion of the ova under the skin of the neck seems to lend some colour to this theory. Since the last larva was removed the lad has been in good health and the glandular swellings have disappeared.

Castle Douglas, N.B.

THE SPONTANEOUS CURE OF SENILE CATARACT.

BY SYDNEY STEPHENSON, M.B., C.M. EDIN.,
OPHTHALMIC SURGEON TO THE EVELINA HOSPITAL, ETC.

THE spontaneous cure of senile cataract must be a rare event, at all events in countries like England, where the condition is not often allowed to become hypermature or "over-ripe." This species of "second sight," as it has been somewhat quaintly termed, may come about in several distinct ways. The commonest, undoubtedly, is for the opaque lens to become slowly absorbed, a process that seemingly may even extend to the capsule. A considerable number of such cases have been reported during the last few years in continental literature, although as regards Great Britain the only case I can find is that published by C. Higgens[1] in 1892. The disappearance of lenticular opacities in diabetic patients is excluded. An instance of that kind has been recorded by Tannahill[2] and commented upon by Nettleship.[3] Secondly, spontaneous cure may follow the formation of a so-called "milky" or "Morgagnian" extract—that is to say, a condition in which the hardened nucleus floats in a liquefied cortex, the whole being inclosed within the lens-capsule. As pointed out by Fuchs,[4] the cortex in such cases may be actually converted into a clear, transparent fluid through which the patient may be able to distinguish external objects, especially when the nucleus lies out of the line of sight, as it would do in the upright position. Again, after the formation of a Morgagnian cataract the cortex may be absorbed and the nucleus may sink below the line of sight. Instances of this latter kind of cure have been reported by Nordmann,[5] William Lang,[6] Mitvalsky,[7] Meyer,[8] Dagilaiski,[9] and Reuss.[10] The last way of spontaneous cure is for the affected lens to become dislocated into the vitreous chamber, where it may remain for years apparently without entailing harm to the eye. A case of this kind, quoted in Mackenzie's classical treatise on the eye,[11] was published as long ago as the year 1690. It possibly occurred in a case reported in 1828 by J. B. Estlin[12] of Bristol. A good recent example has been published by Julian J. Chisolm.[13] The lens, it appears, may become dislocated into the anterior instead of into the vitreous chamber of the eyeball. St. George Peachy[14] had a patient with cataract who recovered "perfect vision" by dislocation of the opaque lens into the anterior chamber, where it underwent gradual absorption.

It might perhaps be thought from the number of cases alluded to above (and more might readily be added) that spontaneous cure of cataract was a commoner event than

[1] Transactions of the Ophthalmological Society of the United Kingdom, vol. xii., 1892, p. 107.
[2] Brit. Med. Jour., Jan. 31st, 1885.
[3] Transactions of the Ophthalmological Society of the United Kingdom, vol. v., 1885, p. 107.
[4] Text-book of Ophthalmology, second American edition, 1899, p. 416.
[5] Archiv für Augenheilkunde, Band xiv., 1885.
[6] Ophthalmic Review, vol. xi., 1892, p. 186.
[7] Revue Générale d'Ophthalmologie, 1893, p. 134.
[8] Ueber Spontane Resorption von Cataracta Senilis, Berlin, 1887.
[9] Klinisches Monatsblatt, June, 1899.
[10] Centralblatt für Praktische Augenheilkunde, February, 1900.
[11] Treatise on Diseases of the Eye, fourth edition, 1854, p. 836.
[12] London Medical Gazette, 1828–1829, iii., p. 566.
[13] American Journal of Ophthalmology, April, 1892.
[14] Maryland and Virginia Medical Journal, February, 1861.

generally supposed. Such an inference, however, would be fallacious, inasmuch as every case of this remarkable phenomenon would almost certainly be placed on record.

The following comprises a brief record of cure brought about by the spontaneous, successive dislocation of each cataractous crystalline lens with the recovery of excellent sight.

A highly intelligent lady, 55 years of age, first consulted me on August 17th, 1892, with the statement that the sight had been imperfect for many years. There had been several attacks of ocular inflammation diagnosed as of a "gouty" nature. The eyes had become worse since the advent of the menopause three years before. The patient was wearing spectacles, —11 D. spherical, which she had obtained from an optician. Right vision: fingers at one metre and Jaeger No. 1 at eight centimetres; left vision: fingers at four metres and Jaeger No. 1 at four centimetres. The vision of the left eye was improved to ⅓ normal with a – 9 D. spherical lens. The tension of the eyeballs was normal. The right crystalline lens was opaque in its deeper parts, with a posterior polar opacity. The left lens exhibited opaque striæ and also a posterior polar opacity. "Floaters" were present in the vitreous humour of each eye.

Eight years later (August 9th, 1900) the patient came to me again. She stated that for several years she had been blind with her left eye and able to see print with the right eye only by holding the book or paper close to her face. On the afternoon of July 25th, 1900, whilst at tea, she found that with her left or blind eye she could see the teacups and the pattern of the tray. On the following day she saw, for the first time for several years, the cornice of her sitting-room. The sight of her left eye continued to clear at the top, but a crescentic mass remained at the bottom of the field. On July 29th with her left eye she could make out the clergyman in the pulpit at church. On August 2nd, whilst coming up stairs, the crescentic mass suddenly disappeared, and soon afterwards she found, to her delight, that she could distinguish the lettering on passing omnibuses. Upon examination, with the right eye vision was equal to counting fingers at 35 centimetres and No. 4 of Jaeger's type could be read at eight centimetres. The vision of the left eye with a + 10 D. lens was ⅔ normal and with a + 14 D. lens the smallest type on Jaeger's card could be read. A nearly mature cataract existed in the right eye. In the left eye the anterior chamber was deep, the pupil clear and black, the iris sluggish and tremulous, and the tension normal. With the ophthalmoscope the dislocated lens was found to be lying in the lower part of the vitreous chamber.

On Jan. 18th, 1902, the patient came to me again. 12 days previously she had noticed that the sight of her right eye was so much clearer that she was able to distinguish her husband across the room. For the next few days the eye was somewhat uncomfortable, mainly because there was a sort of "wobbling," and prismatic colours were visible when the electric light was used at night. On Jan. 16th whilst at dinner she had suddenly discovered that the sight of her right eye had become quite clear. Upon examination the pupil of the right eye was found to be clear and black, the iris tremulous, the anterior chamber deep, and the crystalline lens dislocated into the lower part of the vitreous chamber. Tension was normal. Sight with a + 9 D. lens was ⅔ normal and with a + 12 D. lens the smallest print could be read.

Welbeck-street, W.

A CASE OF PLACENTA PRÆVIA.

BY A. W. LEMARCHAND, M.R.C.S. ENG., L.R.C.P. LOND.,

SENIOR HONORARY SURGEON TO THE BARNSTAPLE AND NORTH DEVON DISPENSARY.

I BELIEVE placenta prævia centrally situated to be rare. The notes of a case given below are interesting, I think, for the following points: (1) the patient was a young woman who had not had many previous pregnancies; (2) the character of the symptoms from the sixth month were typical and warned one to suspect placenta prævia; (3) the good fortune to get a strongly acting uterus and practically no unusual loss of blood when labour did set in; and (4) that non-interference was justified. I do not think that I should have saved the child's life if I had turned and delivered, and from the central position of the placenta I am sure I should have had much hæmorrhage and risked the life of the mother.

I was called on Dec. 21st, 1901, to see the patient, aged 30 years, who had just about completed her sixth month of her third pregnancy. Without any very apparent reason she had had a sharp hæmorrhage but no labour pains. A little opium and absolute rest in bed were ordered. During the next two months there were two more sharp bursts of bleeding but no pains. Through these two months she wore generally one diaper a day which, with the two exceptions noted, were only just soiled. The patient's mother, a midwife, was constantly with her and she was warned that probably the "afterbirth was in front of the head" and she was told, as soon as any pains set in, to send for me. On March 19th I received a message and at once went to the patient. I found that there had been slight hæmorrhage, three diapers being considerably soiled but not saturated. Per vaginam the os was of the size of a two-shilling piece, the vertex was presenting, a pad was felt in front of the head, and there was a cord-like feeling on the pad suggestive of placental vascular trunks. I could feel no edge to the pad. This was at 5.20 P.M. The pains were coming fairly strongly and quickly. I walked to my house about a quarter of a mile, got some chloroform, and telephoned to my partner, Mr. W. Cooper, to come and lend a hand, as I meant to turn. At 5.45, on my return, I found the head advancing; the bag in front of it, which I took to be membranes, felt decidedly thick. Round the presenting part of the head, but more especially in the right lateral quarter of the pelvis, the bag of membranes seemed to be heaped up and I thought that here was the edge of the placenta and that the head was slipping past it. The pains were now very strong and as there was no hæmorrhage and the head would soon be born I decided not to interfere. At about 6.20 Mr. Cooper came in. The sutures in the head could be distinctly felt but the "membranes" seemed to be thicker than normal. At 6.45, no attempt having been made to break the membranes, the whole ovum was expelled and the placenta was found to be spread over the head and shoulders of the child, the centre of the vertex corresponding to the centre of the placenta. The placenta was thin and spread out, covering about half the inner surface of the membranes. The child was dead and efforts to make it breathe were of no avail; it was of fair size and had nails almost to the end of the fingers but none on the toes. About one and a half pints of liquor amnii and blood followed the child; the uterus contracted nicely and after half an hour a 1 in 3000 biniodide douche was given. The patient was cleaned, bound, and made comfortable and at 8.5 P.M. I left the house.

Barnstaple.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF NEARLY FATAL INTRA-LARYNGEAL HÆMORRHAGE FROM PAPILLOMATA OF THE LARYNX.

BY ADOLPH BRONNER, M.D.,

SENIOR SURGEON TO THE BRADFORD EYE AND EAR HOSPITAL; LARYNGOLOGIST TO BRADFORD ROYAL INFIRMARY.

CASES of dangerous hæmorrhage from laryngeal papillomata are extremely rare. The notes of the following case may therefore be of some interest.

A strong, healthy man, aged 48 years, saw me in June, 1896. He had been hoarse off and on for nearly two years and was getting worse. I found a large number of papillomata growing from the vocal cords (edges and upper surface) and the ventricular bands. These were removed at intervals of from two to three months by Fraenkel's forceps. On Dec. 18th, 1897, the patient was running to catch a train when he began to cough and to feel choky

and had to walk slowly. He spat up small quantities of bright blood. In the train he gradually became worse, the cough was more violent and he was continually spitting up small lumps of blood and he felt as if he were going to suffocate. He had a distinct recollection of being asked for his ticket but he did not remember seeing the collector. When he arrived at Bradford, 20 minutes after entering the train and five minutes after having given up the ticket, he had to be lifted out of the carriage and was unconscious for from 15 to 20 minutes. During this time he was violently shaken and brandy was poured down his throat. He coughed up lumps and threads of coagulated blood and froth. He gradually came round and was taken to a private hospital. I saw him in about half an hour. He was breathing rapidly and perspiring freely and was coughing up frothy mucus and small lumps and threads of coagulated blood; some of the latter were ramified and evidently came from the smaller bronchi. The pulse was 125. There was slight dulness of the base of the left lung and numerous rales and sonorous rhonchi were heard over the bases of both lungs. The upper parts of the lungs were normal. The symptoms gradually cleared up in two days. There were not, and never had been, any symptoms of tuberculosis of the lungs. He said that both lungs felt heavy, especially the left, as though a large piece of lead were pressing on them. For the next three or four weeks the patient coughed up small lumps of red blood. He says that for some months before the attack he expectorated very small pieces of blood now and then. I saw him in June, 1898, and could see distinctly a small blood-clot in one of the papillomata of the vocal cords and there was local hæmorrhage after the removal of the clot. The patient used a formalin spray for some months and the papillomata then practically disappeared and there has been no recurrence up to the present time.

The case is a very peculiar one. Of course, the hæmorrhage may have been of pulmonary or intertracheal origin. But the facts that there have been frequent attacks of very slight hæmorrhage without very violent cough, and that I could distinctly see a small blood clot on the papillomata seem to prove that the growths on the edge of the vocal cord were the cause of the hæmorrhage. The violent exertion and excitement in catching the train probably brought on a more severe hæmorrhage than usual and also induced a violent spasm of the glottis which, combined with the blood entering the smaller bronchi, nearly proved fatal.

Bradford.

A CASE OF RELAPSING PYREXIA CONTINUING FOR 14 MONTHS UNABATED.

By SHEFFIELD H. M. NEAVE, M.R.C.P. LOND.

THE following case now under the care of Dr. Harrington Sainsbury at the Royal Free Hospital is so unusual and so defies treatment that I think it cannot fail to be of general interest.

The patient, a male, 17 years old, was in his usual health till February, 1901. He had spent the whole of his life in a house close to the London Docks. In that month he began to have attacks of pyrexia at regular intervals. The predominant symptom from his own point of view was his intense desire to sleep by day as well as by night. In the intervals of his attacks he felt quite well and used to go to work. He has now been in the Royal Free Hospital for nearly six months and during that period has passed through nine cycles of pyrexia and remissions of fever in 172 days, making an average of 19 days apiece. The actual number of days of remission (*r*) and days of pyrexia (*p*) for each of the nine cycles was as follows: (*r*) 11, (*p*) 7; (*r*) 12, (*p*) 7; (*r*) 12, (*p*) 6; (*r*) 14, (*p*) 5; (*r*) 14, (*p*) 6; (*r*) 13, (*p*) 6; (*r*) 14, (*p*) 6; (*r*) 12, (*p*) 7; (*r*) 14, (*p*) 6.

The only physical signs that are in any way permanent are a slight increase of splenic dulness upwards and an enlarged gland in the left axilla. The temperature during an attack rises to a maximum of 105° F. in the third or fourth day and during the last day it comes down by crisis to 96° or 97° with some collapse. The patient has very little discomfort, but is drowsy and has some bronchitis, his tongue is furred, vomiting occurs at the highest point of temperature, there is some tenderness over the spleen, and the blood count shows a leucocytosis of 16,000. The blood has been examined by various pathologists for malaria parasite, spirillum Obermeyeri, and reaction of Malta fever, all with a negative result. During the remissions the patient appears to be fairly robust though somewhat anæmic—the blood showing a deficiency of hæmoglobin—without much wasting, and he feels quite well. Over the period of six months, however, he has lost weight.

Every chance of a collection of pus has been well considered and investigated; *inprimis*, cholecystitis with hepatic intermittent fever has been kept well in view and there is never any sign of jaundice. The cerebro-spinal fluid is sterile. There are no renal symptoms and the urine is normal. A negative result has likewise followed the exploration of the nose, the naso-pharynx, the larynx, and the rectum. There is no affection of the special senses and the fundus oculi and the ear are normal.

Royal Free Hospital, W.C.

A MINUTE PERITONEAL HERNIA THROUGH A CLEFT IN THE XIPHOID CARTILAGE.

By WILLIAM BRAMWELL, M.D., B.CH. DUB.

WHILE making a routine examination of a man, aged 36 years, of not very good muscular development, I noticed what looked like a small fatty tumour over the xiphoid cartilage in the middle line and midway between its attachment to the gladiolus and its lower extremity. The tumour was rather less than half an inch in diameter and was about a quarter of a inch in thickness. On palpation I was surprised to find it become gradually smaller and finally disappear. It also disappeared whenever the patient lay down and there was a slight impulse on coughing. The aperture was a cleft-like perforation in the cartilage with perfectly smooth and symmetrical edges which could be distinctly felt through the skin. It was about half an inch long and a little more than a sixteenth of an inch in width. The patient, who was under treatment for dyspepsia, said that he had noticed the tumour as far back as he could remember but that it had never caused him any pain or inconvenience.

A cleft or perforation in the xiphoid is not an uncommon occurrence but I have never heard or read of a hernia in this situation. This, I judge, was a hernia of a small portion of the parietal peritoneum—that is, a hernia consisting of sac only—and if so is an instructive example of the closeness of apposition of the intestinal contents and of the completeness with which even the smallest crevice is filled in.

Liverpool.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

WESTMINSTER HOSPITAL.

A CASE OF ACUTE BANTI'S DISEASE.

(Under the care of Dr. W. MURRELL.)

THE obscurity which prevails as to the exact nature of the various forms of splenic anæmia can only be dissipated by the careful record of many cases. It is not improbable that the term "Banti's disease" includes more than one variety of disease, but undoubtedly the following case is rightly included under that designation. Dr. Murrell's very full bibliography of the subject is of great value.

A married woman, aged 31 years, residing in Lambeth, was admitted into Westminster Hospital on Jan. 16th, 1902, with a history of hæmatemesis. Mr. A. Mackenzie Hickley, under whose care she had been, reported that she was perfectly well until three days previously when without apparent cause and without premonitory symptoms she vomited three pints of clotted blood. Her previous history was unimportant and there was nothing pointing to hæmophilia in any

member of the family. She was not alcoholic, she was not syphilitic, and she had not suffered from malaria. She was suckling a child 10 months old.

On admission the patient was profoundly anæmic, the temperature ranged from 101° to 102·4° F., the pulse was 156, weak and thready, and the tongue was pale and flabby. She complained of nausea but had no pain after food and did not vomit. There was no thickening about the pylorus, the stomach was not distended, and no tender spot could be detected. The liver was not enlarged but the spleen could be felt. The heart and respiratory sounds were normal and there was nothing indicative of phthisis. She was not suffering from hæmorrhoids and she stated that she was regular. The motions for two days after admission were dark in colour from altered blood. There was no albumin or sugar in the urine. It was regarded as an ordinary case of hæmatemesis from gastric ulcer. She was kept in the recumbent position and was fed at first by the rectum and subsequently with small quantities of milk and beef-tea by the mouth.

The temperature for some days varied from 99° to 102°, but this was thought to be due to mastitis, for which the breasts were anointed with a mixture of extract of belladonna and glycerin. As the patient failed to improve the blood was examined and Dr. R. G. Hebb on the 21st reported that the erythrocytes were only 362,000 and the leucocytes 4375 per cubic millimetre, the hæmoglobin being 20 per cent. On the 22nd there was a further hæmorrhage apparently from the stomach, although in no large quantity. On the 25th the erythrocytes numbered 1,080,000 per cubic millimetre and the leucocytes 4375, the latter consisting of finely granular cells 78 per cent., coarsely granular 1 per cent., hyaline 12 per cent., and lymphocytes 9 per cent. The hæmoglobin (Gowers) amounted to 20 per cent.

The patient showed no signs of improvement and in spite of the administration of strychnine and digitalis the pulse remained at 140 and was very feeble in character. The respirations were at times so rapid that they were counted with difficulty. There was no cough and examination failed to detect any fresh physical signs. On the 28th at 4 P.M., the temperature being then 100·6°, she was transfused by Mr. Nimmo Watson with two pints of saline fluid containing one drachm of chloride of sodium, four grains of bicarbonate of sodium, three grains of chloride of calcium, and one grain of chloride of potassium in the pint. At 8 P.M. the temperature was 104·4° and at midnight 98·6° and the patient died at 2 A.M. on the 29th.

Necropsy.—The post-mortem examination was made by Dr. Hebb 12 hours after death. The body was emaciated, rigor mortis was present, and the surface was very pallid. The teeth were carious. The bones and joints were normal. The mucosa of the mouth and fauces was normal. The tonsils were very slightly enlarged but otherwise they were healthy. The œsophageal mucosa was slightly hyperæmic, otherwise being normal. The gastro-intestinal mucosa was normal. There was no trace or indication of ulceration in the stomach which was very carefully examined. The liver which was normal weighed 50 ounces and was brown. The gall-bladder was normal. The spleen (weight nine ounces) was dark red, free, beefy, and homogeneous. The lymphatic glands, the pancreas (weight three ounces), the kidneys (weight of each five ounces), the adrenals, and the bladder, uterus, and appendages were normal. The thyroid and larynx were normal. The lungs were œdematous but otherwise they were normal; there were a few old adhesions of the right pleura. The heart (weight eight ounces) was normal; there was some soft decoloured and black clot in the cavities. The arteries were normal. The blood in the vessels had the appearance and consistency of coloured water. All the viscera and tissues were extremely pallid and exsanguine. The liver gave the iron reaction in blotches scattered irregularly throughout the section, but the appearances were not conclusive. On microscopical examination of the spleen the connective tissue framework was found to be much thickened generally. The pancreas was fairly normal.

Remarks by Dr. MURRELL.—This may be a case of pernicious anæmia, but I am inclined to regard it as an example of acute Banti's disease. There is some difference of opinion as to what constitutes Banti's disease. By most writers the terms "Banti's disease," "splenic anæmia," "splenic cachexia," "splenic pseudo-leukæmia," "lymphadenoma splenicum," and "splenomegalia primitive" are regarded as synonymous. Senator, however, speaks of it as anæmia splenica with cirrhosis of the liver. Dreschfeld considers that the splenic anæmia of adults, in which besides the anæmia and the large spleen there is usually repeated hæmorrhage (epistaxis, hæmatemesis, and melæna), is the early stage of Banti's disease, marked enlargement of the liver appearing later. He apparently regards the addition of fibrosis of the spleen and cirrhosis of the liver as essential to the diagnosis of a case of true Banti's disease. Banti,[1] however, in his classical works fails to make this distinction and merely speaks of notable tumefaction of the spleen and also of the liver, "a tumefaction independent of any preceding morbid condition and not associated with any leukæmic alteration of the blood." This case presents nearly all the essential features of the disease as described by Banti himself: (1) a progressive idiopathic anæmia; (2) grave disturbance of all the organic functions; (3) irregular fever; (4) hæmorrhage; and (5) a fatal termination. In addition, at the necropsy a cirrhotic condition of the spleen was found.

The patient had carious teeth, but apart from this there was practically nothing to account for her condition. It is difficult to exclude syphilis in women, but as a result of careful inquiry no indication of specific disease was discovered. She lived in a district in which at one time cases of malarial fever were not uncommon, her residence being about a quarter of a mile from the Thames and on the site of an old watercress bed, but no cases have occurred there for the last 20 years. An interesting feature in the case is the diminution in the number of erythrocytes. In Banti's three cases the red blood corpuscles numbered 3,999,000, 3,948,000, and 2,851,350 respectively; in a case reported by Potain they fell to 2,000,000; whilst F. Taylor's lowest count was 1,370,000. Hayem[2] considers that a patient is in a very serious condition when the number of red cells approaches 1,000,000 and thinks that life could not be maintained if they fell to 300,000 or 400,000. In some fatal cases of anæmia, however, less than 300,000 have been found. The lowest count on record is one reported by Quincke in which there were only 143,000 per cubic millimetre.

Splenic anæmia is a comparatively rare disease and there are probably not more than 30 or 40 published cases all told. Woillez[3] in 1856 described a case of enlargement of the spleen with the general symptoms of leucocythæmia but without any increase in the number of white blood corpuscles. Collin[4] in 1862 recorded a case which may have been one of splenic anæmia but was probably an abscess of the spleen. In 1867 Müller[5] published two undoubted cases. Landouzy[6] in 1873 published a case in which epistaxis was the prominent feature and in which an examination of the blood gave 1,000,000 red blood corpuscles per cubic millimetre, the white being to the red in the proportion of 1 to 312. Both liver and spleen were hypertrophied. In 1875 Pye-Smith[7] read before the Pathological Society of London the notes of a case of enlarged liver and spleen from overgrowth of adenoid tissue without leukæmia. In 1876 Adolf Strümpel[8] of Leipsic published a valuable paper on Splenic Anæmia, illustrated by a case. Lodi[9] in 1880 gave details of a case in which the red blood corpuscles numbered 1,820,000 per cubic millimetre, speedily falling to 1,000,000 without any increase in the leucocytes. At the necropsy the spleen was found to be much enlarged and the liver was hard. Banti[10] (1881–83) recorded three carefully observed cases in two of which a necropsy was secured. In 1885 P. K. Pell[11] published two cases and other cases were recorded by Potain,[12] Gobain,[13] Renvers,[14] and Degle.[15] Bruhl[16] in 1891 contributed a valuable article entitled "De la Splenomegalie

[1] Contributo allo Studio delle Anemie Progressive, Firenze, 1881, and Dell' Anemia Splenica, Archivio di Senola d'Anatomia Patologica, 1883.
[2] Du Sang, Paris, 1899.
[3] Bulletin de la Société des Hôpitaux, 1856.
[4] Ibid., 1862.
[5] Berliner Klinische Wochenschrift, 1867; also De l'Anémie Pernicieuse Progressive, Zürich, 1877.
[6] Bulletin de la Société Anatomique, 1873.
[7] Transactions of the Pathological Society of London, vol. xxvi.
[8] Archiv der Heilkunde, vol. xvii.
[9] Traité de la Leucémie, Bologne, 1880.
[10] Loc. cit.
[11] Berliner Klinische Wochenschrift, 1885 and 1887.
[12] Semaine Méticale, 1887.
[13] Ibid.
[14] Deutsche Medicinische Wochenschrift, 1888.
[15] Wiener Medicinische Presse, 1891.
[16] Archives Générales de Médecine, 1891, vols. i. and ii.

Primitive" in which he gave a *résumé* of the literature of the subject. In 1892 Carr[17] read before the Medical Society of London a paper on Enlargement of the Spleen in Young Children with an analysis of 30 cases and Stanley[18] in 1895 showed the organs from two cases of splenic anæmia. In 1893 R. T. Williamson[19] of Manchester recorded two cases—one in a boy, aged nine years, and the other in a man, aged 21 years. The paper is accompanied by illustrations of the microscopical appearances of the organs. In 1896 S. West[20] published a case of splenic anæmia in a man, aged 36 years, with a temperature-chart. In 1896 F. Taylor[21] published a case in a girl, aged 13 years, with a good summary of blood estimates. In 1899 Bertram W. Sippy[22] of Chicago published an extremely interesting case accompanied by excellent illustrations of the post-mortem appearances of the organs. This was followed by an article by the same writer[23] containing a critical summary of the literature of the disease with a copious but incomplete bibliography. In 1900 Osler[24] published a series of 15 cases, five of which had been previously reported by him. In seven of these cases hæmorrhage was the feature for which the patient sought relief. In one of the cases the hæmorrhages had recurred over a period of seven years. The average blood count of 14 cases was 3,336,357 red blood corpuscles per cubic millimetre. Ascites was present in only three cases and cirrhosis of the liver was not always an accompaniment. Melanoderma is frequently mentioned. In the case of a man, aged 33 years, the spleen was removed and the patient a year later continued well. Cabot of Boston[25] gives the results of an examination of the blood in a series of six cases but without details. His lowest blood count was 384,000 with 1800 leucocytes and 35 per cent. of hæmoglobin.

In 1900 I published[26] a case of supposed lymphatic leukæmia treated surgically by the establishment of a collateral circulation. The patient died on July 31st, 1901, and at the necropsy it was found that the liver, which weighed 38 ounces, was markedly cirrhotic, the lobules being isolated by strands of connective tissue. On microscopical examination it showed great excess of interlobular connective tissue with diminution of liver substance. In the connective tissue were numerous ducts, some lined with columnar and others with cubical epithelium, the latter predominating. The liver cells took the stain badly, the protoplasm having a muddy appearance and the nuclei being very faintly coloured. There was some small round-cell infiltration in the lobules but no fatty degeneration. The spleen was enlarged and deep red in colour, especially in the upper part, where there was a wedge-shaped patch deeply congested resembling an infarct; in the centre of the congested area was a small abscess containing thick yellow pus, whilst two other small abscesses were noted in the substance of the spleen at the lower part. This was undoubtedly a case of Banti's disease—the first treated by the Drummond-Morison operation. In November, 1901, Senator[27] gave an address on Banti's Disease before the Medical Society of Berlin and pointed out that the tendency to hæmorrhage was especially marked; epistaxis, frequent and severe, and hæmorrhages from the stomach, either ushering in the disease or appearing later and repeating themselves, were not uncommon. In a period of five years he had seen seven such cases, six of them with gastric or intestinal hæmorrhage. Other forms of hæmorrhage were not uncommon and included bleeding from the gums, hæmoptysis, purpura, and hæmorrhage into the vitreous.

Splenectomy is probably the best mode of treatment in Banti's disease. Although this operation almost invariably terminates fatally in leucocythæmia several cases of splenic anæmia have been recorded in which a cure followed removal of the spleen; whether exosplenopexy would prove equally efficacious is an open question.

[17] Transactions of the Medical Society, vol. xv.; THE LANCET, April 23rd (p. 907) and 30th (p. 963), 1892.
[18] Brit. Med. Jour., vol. ii., 1895.
[19] Medical Chronicle, vol. xviii.
[20] Transactions of Royal Medical and Chirurgical Society, vol. lxxix.
[21] Guy's Hospital Reports, vol. lii.
[22] American Journal of the Medical Sciences, vol. cxviii., p. 428.
[23] Ibid., p. 570.
[24] Ibid., vol. cxix. See also Canada Medical and Surgical Journal, vol. xi., and Edinburgh Medical Journal, 1899.
[25] Clinical Examination of the Blood, fourth edition, 1901.
[26] THE LANCET, June 16th, 1900, p. 1725.
[27] Berliner Klinische Wochenschrift, 1901, vol. xlvi.

NORTHAMPTON GENERAL INFIRMARY.

AN ANOMALOUS CASE GIVING WIDAL'S REACTION.

(Under the care of Dr. P. S. HICHENS.)

THE value of Widal's reaction in the diagnosis of typhoid fever is at present well established for all ordinary cases, but undoubtedly here and there cases do occur in which this reaction is obtainable although typhoid fever is not present. The previous occurrence of an attack of this disease is sometimes the explanation of this anomaly, but in the following instance there appears not to have been the slightest evidence of any previous illness. It must, in fact, be recognised that the test is not absolutely diagnostic, but the exceptions are so few that in practice they may be left out of account.

A boy, aged 16 years, was admitted into the Northampton General Infirmary on Oct. 5th, 1901, under the care of Dr. P. S. Hichens. The family history was good; there was nothing of importance connected with it. The previous history also was good, neither the patient nor his relatives acknowledging to any prior illness. The present illness began two weeks before admission with swelling of the abdomen and pain in it. The pain lasted for a week, then disappeared for three or four days and came back again. The boy appeared in a somewhat torpid condition mentally, so that it was difficult to get at all minute and accurate answers from him, but the pain appeared to be fairly constant, though it was aggravated by food, and was situated more in the left than the right side of the abdomen; there was no history of diarrhœa or vomiting. The swelling of the abdomen was said to be steadily increasing. On inspection the skin generally was of a somewhat sallow tinge, while the cheeks were flushed. He had the passive yet anxious look not infrequently associated with enteric fever. His tongue was dry and brown and his lips and gums were crusted with sordes. He was expectorating a little blood-stained sputum, the bleeding apparently coming from the gums. On inspecting the trunk the abdomen was found to be greatly distended and over both it and the thorax were ramifying numerous greatly distended, subcutaneous veins. The distension of veins was rather more marked on the right than on the left side of the trunk and was especially noticeable about the umbilicus.

On examination the noticeable features were that the liver dulness appeared to extend from the fourth right rib to about one inch below the costal margin, that the area of splenic dulness was very well marked, that the stomach was very considerably distended, and that there was an area of slightly shifting dulness in the left flank. The abdomen was too distended for it to be possible to make out anything by palpation. Furthermore, on the abdomen were scattered four or five spots suggestive of enteric papules. The temperature was normal or subnormal, the pulse was of moderate rapidity, and there were no abnormal constituents in the urine. The diagnosis of the case seemed to be very uncertain. The increased liver dulness with the great distension of superficial veins was of course suggestive of a possible cirrhosis of the liver obstructing the circulation in the portal vein, but the age of the boy made this supposition very unlikely. On the other hand, the general appearance of the boy, the well-marked area of splenic dulness, and the few scattered rose-spots on the distended abdomen were suggestive of enteric fever. It seemed possible that he might be suffering from this disease complicated with thrombosis of the veins. The boy was put on a diet of milk and beef-tea and was given enemas with the hope of reducing the distension of the abdomen. On the 8th a specimen of the blood was sent to the Clinical Research Association and on the 10th a report was received to say that it gave a very well-marked Widal's reaction with dilutions of 1 in 10, 1 in 25, and 1 in 50.

By this time the abdomen was slightly less tumid and the spleen could distinctly be felt. There were no fresh spots. The boy refused to take milk, as he said it gave him pain in the stomach. On the 11th the pain was gone and he was taking milk all right. On the 14th he seemed to be much better; there was no pain and the dulness in the left flank had disappeared. The patient progressed favourably on the whole, having no fever all this time and a marked return of appetite. He was a good deal troubled with constipation, only getting relief by enemas. The abdomen, however, still remained very tumid and the superficial veins were still greatly distended. On the 28th his temperature began to rise slightly for the first time. The spleen could no longer

be felt. There was a slight systolic murmur to be noticed over the mitral and pulmonary area. On the 29th he complained of pain in the abdomen again, his temperature rose to 102·6° F., and he vomited a large mass of acid-curdled milk mixed with dark blood-clot. On the 30th he seemed to be very ill and was inclined to be delirious. He passed two large motions of tarry blood, evidently coming from the stomach. His temperature remained high. On the 31st he was wildly delirious; more blood was passed by the bowels in the night. In the evening he appeared to be moribund. He had then developed a loud, musical, systolic murmur, audible at three or four feet from the bed; there was also a marked systolic bruit in the dilated superficial veins. He died on the evening of Nov. 1st after being unconscious all day. Further hæmorrhages from the rectum occurred.

Necropsy.—At the post-mortem examination the body was found to be fairly well nourished. There was great distension of the superficial abdominal and thoracic veins, especially on the right side, and there was marked distension of the parumbilical vein and of numerous small retroperitoneal veins in the right and left lumbar regions. No ascites was present. There was nothing abnormal as regards the heart; it weighed six ounces. The larynx, trachea, and bronchi were healthy. No pleuritic adhesions were present. The lungs were congested but otherwise normal. The inferior œsophageal veins were greatly distended; no rupture of them or ulceration into them could be detected. The stomach was somewhat distended and slightly congested but otherwise was healthy; there was no sign of ulceration. There was some blood-clot in the intestines but otherwise they appeared to be absolutely healthy. The Peyer's patches and solitary lymphoid follicles showed no signs of inflammation, enlargement, or ulceration. The spleen was enlarged and congested; it weighed 10½ ounces. The kidneys weighed seven ounces; they were congested but otherwise were apparently healthy. The urine was drawn off and showed crystals of ammonium urate but no leucin or tyrosin. The liver, which weighed 43½ ounces, was enlarged and obviously greatly diseased; it was extremely hard, nodulated, and of a pale yellow colour mottled with red patches. The mottling was especially marked on the anterior surface of the right lobe; the lobus Spigelii was much enlarged and was more red than yellow. The organ on section was very tough; the surfaces of the sections showed large irregular yellowish areas containing more or less isolated lobules of deeply-congested liver tissue. In both right and left lobes large areas appeared to be entirely devoid of liver substance, its place being taken by extremely tough, yellowish tissue, probably fibroid in character and apparently more or less arranged round the branches of the portal vein. In the lobus Spigelii there was much more liver tissue remaining. There was no perihepatitis. On microscopical examination the condition was shown to be one of extremely advanced multilobular cirrhosis.

Remarks by Dr. HICHENS.—There can be no doubt whatever that the patient died from cirrhosis of the liver complicated by hæmorrhage into the alimentary tract and coming probably from the dilated œsophageal veins. The cause of the cirrhosis must be left uncertain; no alcoholic history was obtained or any history pointing to syphilis, scarlet fever, or malaria. The main interest in the case, however, seems to me to centre about the meaning of the Widal's reaction which was so markedly present. Had the patient been suffering from enteric fever or had he not? The presence of rose spots, the tumidity of the abdomen, the enlargement of the spleen, and a well-marked Widal's reaction naturally made the diagnosis seem almost certain at the time, despite the fact that there was no pyrexia. The post-mortem appearances, on the other hand, almost conclusively negative this diagnosis. There were absolutely no lesions of any kind in the intestinal tract and there was abundant cause in the advanced cirrhosis of the liver to account for most if not all the symptoms of his illness and death.

Cases of enteric fever without intestinal lesions have, of course, been recorded and the case of Du Cazel which Professor Osler mentions in this respect seems to be conclusive. In his case there were no lesions in the intestines but typhoid bacilli were isolated elsewhere. Professor Osler, however, appears to go back on this opinion in the article on Typhoid Fever just issued in Nothnagel's "Encyclopædia of Practical Medicine." He here states that he does not consider attacks of typhoid fever without bowel lesions to be definitely proved. It seems to me much more natural to regard this as a case of advanced cirrhosis of the liver in which the blood gave a well-marked Widal's reaction. If I am right in this supposition such a case shows that a well-marked Widal's reaction may prove to be entirely fallacious in leading one to a definite diagnosis of enteric fever, and that, too, in just one of those cases where one would be most glad of its assistance.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Pathology and Treatment of Malignant Endocarditis.

A MEETING of this society was held on April 22nd, Mr. ALFRED WILLETT, the President, being in the chair.

Dr. WILLIAM EWART and Mr. A. S. MORLEY, in resuming the discussion on the Pathology and Treatment of Malignant Endocarditis,[1] communicated a paper on the Possibility of Recovery from the Active Stage of Malignant Endocarditis. Cases of recovery from malignant ulcerative endocarditis had from time to time been published, but in most instances ocular demonstration had then been wanting as to the extent of the disease. The three fatal cases which were to be brought before the society seemed to show that very extensive destructive changes in the heart might be recovered from, and that even whilst the late consequences might lead to death changes of repair might be proceeding at the original seat of disease. The cases were, Dr. Ewart and Mr. Morley believed, also of interest from a clinical standpoint. Attention was called to the following points: (1) the insidious onset; (2) the long duration of the cases; (3) the extreme emaciation and other symptoms simulating phthisis; and (4) the difficulty of a correct diagnosis even at a late date. But the chief objects of this communication were to support three further points which were of practical importance—viz.: (5) the fatal tendency of the disease if not treated; (6) the possibility of arrest and therefore, perhaps, of recovery even at an advanced stage; and (7) the share taken by treatment in aiding recovery and the suggestions as to the probable mode of action of the remedies. Case 1, a girl, aged 17 years, was treated for rheumatism and suspected of phthisis and of tuberculous meningitis; she was admitted to hospital on April 1st, 1901, and died from syncope on Dec 29th. She was laid up in December, 1900, with severe pain in the left lower limb, and for the two months prior to admission she had had dyspnœa, palpitation, and progressive wasting, with a little redness and swelling of the ankles. The case was diagnosed as one of tuberculous phthisis with rheumatism and mitral stenosis and the patient was treated accordingly, and from April 10th to 23rd she was given one grain of protargol in water three times a day and one and a half drachms of Easton's syrup. At the necropsy a large patch of grey necrotic vegetations was found in the left auricle just above the mitral orifice. Several of the chordæ tendineæ had ruptured after ulceration. In this case there was no indication of any attempt at local repair and this contrasted with the appearances presented by the two hearts of the two other cases. In Case 2 a girl, aged 14 years, was pale and emaciated with bluish, clubbed fingers and slight anasarca on admission on April 16th, 1901. She complained of palpitation, dyspnœa, and cough. She had had rheumatic fever two years previously. The teeth and gums were in a very bad state. Percussion gave some dulness at the apex of the right lower lobe. A provisional diagnosis of mitral stenosis with aortic regurgitation and of phthisis was made, but in a few days the remittent pyrexia and the changeable murmurs together with the leucocytosis identified the case as one of malignant endocarditis. As she did not improve under tonics and cod-liver oil and under urotropin, daily injections of five cubic centimetres of anti-streptococcic serum were given from May 2nd to 24th. Their chief effect was considerable general and mental depression. On the 24th daily inunctions of a 20 per cent. ointment of protargol were begun. The hectic temperature continued to the end. She died rather unexpectedly after a short period of dyspnœa. The post-mortem examination showed a remarkable malformation of the heart and malignant endocarditis.

[1] THE LANCET, April 12th, 1902, p. 1026.

affecting the aortic orifice. A deep ulcer almost perforated the aorta just above the valves. Few traces of embolism were to be seen except a yellowish deposit which proved to contain tubercle bacilli in the right lung. Most of the lesions appeared to be in process of healing. Case 3 was that of a man, aged 32 years, who was admitted in a state of extreme exhaustion and emaciation on April 28th, 1901. He had been ill since November, 1900, when he was treated for "acute gastric catarrh with congestion of the liver and evidence of early cirrhosis." He had had rheumatic fever at the age of 20 years. The original symptoms were accompanied with pyrexia, night sweats, and rapid wasting. He recovered sufficiently to get about but was seized with severe pain in the splenic region and this was followed by acute "rheumatism" in the right foot which yielded to salicylates. The fever and night sweats did not abate and the nature of the disease remained obscure, though tuberculous phthisis was suspected. A deep-seated abscess was also suggested by the symptoms. On admission the double aortic and systolic mitral murmurs pointed to malignant endocarditis. The mouth was in an exceedingly foul state, with many decaying stumps. Subsequently a fair trial was given to anti-streptococcic injections, although the blood had been found sterile, but without apparent results. A 20 per cent. protargol ointment was then ordered to be rubbed into the skin twice daily. The patient died on June 9th, apparently from heart failure. At the necropsy no tuberculosis was found and the heart presented the aspect of vegetative endocarditis. Dr. Ewart and Mr. Morley thought that inunctions of protargol had proved beneficial and the improvement noted encouraged a hope that more powerful remedies might be found, and that malignant endocarditis might cease to be regarded as practically incurable. Dr. Ewart added a note to the paper to the effect that in his belief intravenous injection of antiseptic agents seemed to be indicated in this disease. He had employed this method beneficially in acute pneumonia and phthisis with relatively slight risk.

The PRESIDENT, in opening the discussion, remarked on the interest attaching to the two communications, that by Dr. F. J. Poynton and Dr. A. Paine on the one hand, and that by Dr. Ewart and Mr. Morley on the other—the former from a bacteriological and the latter from a clinical standpoint.

Dr. A. E. SANSOM was pleased to find that observations which he had made long ago were now receiving confirmation, the outcome of which was that so-called ulcerative, or, as it should be called, malignant, endocarditis was not to be regarded as hopelessly incurable. The physical signs in the very worst and most advanced lesions might be very slight, and *vice versâ*. Temperature alone could not be relied upon for diagnosis. Many cases recovered partially, or for a time, at any rate. He referred to several cases. He had not been favourably impressed with treatment by anti-streptococcic serum. He quite concurred with Dr. Poynton and Dr. Paine in discarding the word "septic" in connexion with these cases. If they were "septic" it was something superadded to the rheumatic process.

Dr. D. B. LEES congratulated Dr. Poynton and Dr. Paine on the masterly investigation which they had carried out. It seemed to him that they had established the fact that the rheumatic poison was at least one of the causes of what was known as malignant endocarditis. This involved the proof of two steps, the first of which was that rheumatic fever was due to a specific diplococcus. The proofs of this were indubitable. Many of the cases utilised by Dr. Poynton and Dr. Paine were under his (Dr. Lees's) care. The second step which these observers had established was that this same rheumatic microbe was capable in some circumstances of producing in rabbits simple rheumatic fever and in others what was to all intents and purposes malignant endocarditis. But these facts were quite in keeping with clinical experience in the wards. Dr. Lees quoted cases in illustration of these facts. Malignant endocarditis might undoubtedly be produced by many infections, but these observers had definitely proved that rheumatic diplococcus was certainly one of them. These researches were far-reaching. Dr. Lees regarded it as probable that rheumatoid arthritis was capable of originating from several causes, one of which was very likely to be the diplococcus rheumaticus.

Dr. NEWTON PITT remarked that Dr. Poynton and Dr. Paine's latest communication—the one now before the meeting—was more conclusive in its results and carried conviction to his (Dr. Pitt's) mind. Clinically it was not possible to distinguish malignant endocarditis due to the diplococcus of rheumatism from that due to streptococci or other infections. Nor was it possible to distinguish these cases after death. Perhaps these researches would aid. He referred to a case of typically non-fungating endocarditis which nevertheless was undoubtedly malignant and infective in origin. Pneumococci, gonococci, and streptococci were all capable of producing malignant endocarditis and now undoubtedly the diplococcus rheumaticus was another. There was no doubt that this was the causal agent of rheumatic affections. What clinched the matter was the production of heart lesions in animals. A great deal depended on the dose of the culture; very large doses, but not too great, were needed. It was a most important matter that this organism was not pyogenic. The infarcts of malignant endocarditis might be very numerous but yet not, as a rule, suppurative. Nevertheless, some were suppurative. With a view to ascertain in what proportion of cases suppurative lesions occurred he had searched the records of Guy's Hospital for the 13 years 1885 to 1897, when 6221 necropsies had been performed. There had been 110 cases of malignant endocarditis. The origin of these could mostly be traced to some infective process, but there were 12 which merited special attention. Six of these had probably originated in suppuration—situated in the periosteum in three cases, in the prostate in two cases, and in a retained placenta in one case. This left a residue of six cases which had arisen without obvious cause and these might fairly be assumed to be of rheumatic origin. But on investigation four of these were found to have resulted in suppurative emboli in the spleen, two in the heart, one in the kidney, and one in the lungs. These data seemed to suggest that malignant endocarditis of rheumatic origin might result in suppurative emboli. However, as regards anti-streptococcic serum Dr. Pitt regarded it as entirely useless. Possibly Dr. Poynton and Dr. Paine would succeed in preparing an antitoxin.

Dr. F. PARKES WEBER asked Dr. Poynton and Dr. Paine whether in their experiments on rabbits relative to malignant endocarditis of rheumatic origin they had met with renal changes resembling those found in typical cases of "large white kidney" in man. Some years ago a young adult hospital patient suffering from a chronic form of malignant, probably rheumatic, endocarditis developed severe renal disease as a complication; a subsequent post-mortem examination revealed the presence of typical "large white kidneys." He believed that typical "large white kidney" was the anatomical expression of a malignant form of nephritis which might be produced by various microbes, one of which was probably the microbe found by Dr. Poynton and Dr. Paine in cases of malignant endocarditis of rheumatic origin. He thought that too much importance was attached to the presence or absence of suppuration as differential diagnostic evidence in microbic diseases. It was an old observation that occasionally in malignant endocarditis some of the emboli gave rise to suppuration whereas others in the same patient did not.

Dr. E. W. A. WALKER had (with Dr. R. M. BEATON) investigated four cases and in all he had found the diplococcus rheumaticus. The first was a case of infective endocarditis; and in this he also found staphylococcus, but it was of a non-infective kind. The same two microbes had also been found in a case of chorea and also in another case of bilateral pleural effusion. Experiments had also been made on animals and the disease reproduced in them. All the investigations which he and Dr. Beaton had made had amply confirmed the researches of Dr. Poynton and Dr. Paine.

Dr. J. H. DRYSDALE remarked that there were no means of distinguishing certain cases of malignant from simple rheumatic endocarditis, either clinically or pathologically. The question which he wished to raise was whether rheumatism was really a specific infection. The diplococcus rheumaticus had many streptococcal characters. Three separate types of inflammation might be set up from one single strain of streptococci obtained from an abscess. Were there not, he asked, also many different effects produced by the diplococcus rheumaticus? The type of inflammation set up by a microbe was not by any means a feature by which complete identification could be established, and he could not help thinking that the rheumatic diplococcus was related in some way to the streptococcal family.

Dr. WILLIAM BLAKE wished to ask Dr. Poynton and Dr. Paine how they would reconcile lumbago, sciatica, some forms of headache, and other ailments which were relieved by salicylates with the microbe of rheumatism? Were these ailments of rheumatic origin?

Dr. POYNTON, in replying, said that they owed a great deal to the enthusiasm and help of Dr. Lees. It was extremely difficult to maintain the virulence of this organism outside the body. Some of the abscess formations in the emboli might possibly be due to secondary infections but that still needed proof. In reply to Dr. Weber they (Dr. Poynton and Dr. Paine) had certainly found large white kidney in quite a considerable number of cases, both in man and in animals. Gram's method as a test was often apt to be over-rated. The specificity of rheumatic fever rested very largely on clinical proofs. If there were many microbic causes of rheumatism each must admit of individual proof. It was difficult to explain lumbago as there had been no post-mortem examinations on such cases.

Dr. PAINE, in replying, said that the chief difficulty of producing the disease in animals lay in the largeness of the dose required. The diplococcus rheumaticus was more nearly related to the pneumococcus—i.e., the diplococcus lanceolatus—than the streptococcus pyogenes in its bacteriological properties.

ERRATUM.—We regret that in THE LANCET of April 12th, in our report of the meeting of the Royal Medical and Chirurgical Society on April 8th, the name of Mr. W. J. Walsham appeared as President of the society. This, of course, was an error. The name should have been that of Mr. Alfred Willett.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Specimens.—Some Considerations on the Medullated Nerve Fibres of the Cerebral Cortex.—Extensive Series of Developmental Faults in the Spinal Cord, Medulla, Cerebellum, and Pons.—Some Further Observations on the Normal and Pathological Anatomy of the Human Stomach.

A MEETING of the pathological and microscopical section of this society was held on April 17th, Mr. RUSHTON PARKER, the President, being in the chair.

Dr. A. C. RENDLE showed a Larynx with a small Warty Growth filling both Ventricles and some Erosion of the Cords. The case had terminated fatally, after symptoms extending over five weeks, from asphyxia; the patient was the subject of early tertiary syphilis.

Mr. DOUGLAS-CRAWFORD showed microscopic and macroscopic specimens of Adenomatous Growths removed from the Prostate; also sections of a Secondary Sarcomatous Growth in the Lungs of a Child, aged three years, the primary growth having been removed some months before and diagnosed as a congenital sacral fibro-cystic tumour.

Mr. ARTHUR WALKER showed sections from the edge of a Rodent Ulcer Healing under Treatment by the X Rays; the new growth was undergoing Fibro-myxomatous Degeneration.

Mr. THELWALL THOMAS showed a Vermiform Appendix and a Piece of Omentum removed from a Femoral Hernial Sac. The tip of the appendix was gangrenous and the history of the case indicated appendicitis, then adhesion to omentum, and, lastly, herniation of the mass into the femoral sac.

Dr. A. W. CAMPBELL read a note entitled "Some Considerations on the Medullated Nerve Fibres of the Cerebral Cortex." By means of lantern slides of sections he illustrated the varieties of arrangement of the medullated fibres in different cortical areas and the possibility of defining the areas associated with different functions on histological grounds.

Dr. W. B. WARRINGTON and Mr. KEITH MONSARRAT read a note on a case exhibiting an Extensive Series of Developmental Faults in the Spinal Cord, Medulla, Cerebellum, and Pons. The child from whom the specimens were obtained was aged eight weeks. There was a healed spina bifida at the level of the fourth and fifth lumbar vertebræ, paralysis of the lower limbs, and double talipes varus. The cord was divided symmetrically in the dorsal region by an exostosis; it was embedded in a friable substance which proved on examination to be a fine connective tissue containing a few muscle fibres. Medullated fibres were entirely absent from the lower part of the cord; in the upper part they were only found in Burdach's column and the anterior ground substance. There was also a condition of syringomyelia. In the brain the arrest of development had involved the cerebellum and its three peduncles with their nuclei of origin. The cerebellum itself was represented by an extremely rudimental organ, consisting of a few leaflets. Sections through the bulb showed that there were no myelinated fibres in the cerebellum and that the transverse fibres of the pons with the nuclei pontis were entirely absent. The restiform body was hardly represented, the olivary bodies were entirely absent, as also were the external arcuate fibres, the superior cerebellar peduncles, the grey nuclei of the cerebellum, and the nucleus ruber tegmenti. There was a family history which, though not conclusive, was strong evidence of a syphilitic taint.

Dr. E. E. GLYNN read a paper entitled "Some Further Observations on the Normal and Pathological Anatomy of the Human Stomach." The material was derived from a series of 70 stomachs collected for two years in which post-mortem changes were prevented by the introduction of formol. The fact that post-mortem digestion destroyed the chief cells much sooner than the border cells was evidence that the latter secreted hydrochloric acid. The normal stomach when preserved by formol showed, in addition to rugæ, a "mosaic" appearance due to the marking out of polygonal areas by depressions, the areas being from one-eighth to one-fourth of an inch in dimensions and the depressions representing linear thinning of the mucous membrane. In the dilated stomach the rugæ were absent and the mosaic were present; in chronic gastritis both disappeared and the surface was granular. Chronic gastritis was common but was usually localised and most frequently attacked the lesser curvature of the adjacent posterior surface near the cardia; less frequently it was found near the pylorus, while the fundus, the anterior surface, and the greater curvature were rarely affected except when the gastritis was of the diffuse variety. The localisation of the lesion at the lesser curvature was in all probability due to the fact that irritating ingesta first impinge on this part of the stomach. Microscopically, destruction of the border cells was commonly present and mucoid degeneration. Nine cases of gastric cancer were analysed; in four there were advanced diffuse chronic gastritis with almost total destruction of the border cells; in one of these cases free hydrochloric acid was absent clinically. If it was true that free hydrochloric acid was absent in 80 per cent. of cases of gastric cancer this absence was due to associated advanced chronic gastritis and this gastritis appeared to be in most cases antecedent to the cancer. In two cases at least cancer appeared to have originated in a previous chronic ulcer. Chronic gastritis and chronic ulcer also appeared to be associated. Attention was drawn to six cases of modified hour-glass contraction, in one case the result of a cicatrising ulcer on the lesser curvature, in the other five the stomach was normal and the condition was apparently due to excessive action of the circular muscular fibres upon the centre of the lesser curvature.

In the discussions on the various subjects the following members took part: the PRESIDENT, Sir WILLIAM BANKS, Mr. G. P. NEWBOLT, Dr. WARRINGTON, and Mr. MONSARRAT.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Angio-neurotic Œdema.—Exophthalmos of the Right Eye becoming Exophthalmos on Stooping.—Nasal Suppuration.—Exhibition of Cases and Specimens.

A MEETING of this society was held on April 18th, Dr. A. BARRS, the President, being in the chair.

Dr. T. WARDROP GRIFFITH read a paper on a case of Angeio-neurotic Œdema.—The PRESIDENT, Dr. A. MANTLE, Dr. J. ALLAN, and Dr. T. JOHNSTONE took part in the discussion, and Dr. GRIFFITH replied.

Mr. MICHAEL A. TEALE related a case in a young woman, aged 21 years, who complained that her right eye "came forward" on stooping. This caused discomfort and occasionally some pain. It was noticed for about three years and no cause was known. On stooping or on compression of the right side of the neck the right eye became exophthalmic and the eyelids became swollen in about 20 seconds. Previously to this the eye had been somewhat enophthalmic. On sitting upright or relaxing pressure the eye and lids became as before. Optic neuritis in both eyes had at one time been noted but there was none now. Vision with both eyes was about ⅓. The fundi and irides were normal. No tumour or

bruit could be discovered. The affection was probably due to a varicose condition of the retro-ocular veins.—Dr. A. BRONNER, Mr. A. L. WHITEHEAD, Mr. R. LAWFORD KNAGGS, Dr. GRIFFITH, Mr. PRIDGIN TEALE, and Dr. D. S. LONG took part in the discussion, and Mr. M. A. TEALE replied.

Dr. BRONNER read a paper on the Causes and Treatment of Nasal Suppuration. He drew attention to the frequency of nasal suppuration and to its many and often dangerous complications—laryngitis, gastritis, broncho-pneumonia, orbital abscess, meningitis, and general pyæmia and septicæmia. It could be the outcome of acute rhinitis or of infectious diseases such as scarlet fever, diphtheria, pneumonia, influenza, or syphilis or of a foreign body. In most cases Frænkel's pneumonia diplococcus was found. In children purulent rhinitis was often due to diphtheria which could be confined to the nares. These cases were of great practical importance, were often overlooked, and were a common cause of some of the mysterious outbreaks of diphtheria. Syphilitic rhinitis was often very dangerous and a frequent cause of meningitis. These cases required most careful local treatment. In chronic nasal suppuration the turbinates and one or more of the accessory nasal cavities were generally diseased and the suppuration could not be cured till these had been treated. The symptoms of disease of the maxillary antrum, frontal sinus, anterior or posterior ethmoidal cells, and the sphenoidal sinus, and the treatment of the same, were minutely described. In speaking of nasal polypi Dr. Bronner referred to the work done by Woakes, Grünwald, Hartmann, and others. He himself was of opinion that in most cases of nasal polypi there was disease of the underlying bone or of the ethmoidal cells. If these parts were not thoroughly examined, and if necessary scraped, there was sure to be recurrence of the polypi. He also spoke of the great importance of using cocaine and suprarenal extract in all intranasal operations. A number of lantern slides were shown demonstrating the anatomy and pathology of the accessory nasal cavities.—Mr. WHITEHEAD and Dr. GRIFFITH took part in the discussion and Dr. BRONNER replied.

The following cases, pathological specimens, &c., were shown:—

Mr. A. W. MAYO ROBSON: Specimen of complete Removal of the Urinary Bladder for Tumour.

Dr. MANTLE: (1) A patient with Aneurysm of the Arch of the Aorta (radiograph); and (2) a Malignant Ulcer of the Stomach.

Mr. G. CONSTABLE HAYES: (1) A Cyst of the Iris; and (2) Extreme Distortion of the Face due to Nasal Polypi.

Dr. E. F. TREVELYAN: (1) An unusual case of Senile Tremor; (2) a case of Unilateral Laryngeal Paralysis in a case of Phthisis with a Mass of Glands in the Neck; and (3) a series of Experiments to show the Stability of Oxalic Acid in the presence of decomposing and digesting fluids.

Dr. ALLAN: (1) a Heart showing Stenosis of Three Valves; (2) a Cirrhotic Liver and Œsophagus from a case in which there was fatal hæmorrhage; (3) a Stomach and Liver showing Cancer; and (4) a Liver showing Hydatid Cyst.

Mr. C. J. WRIGHT: Casts of Fœtal Heads to show birth-moulding after various presentations.

Mr. E. WARD: (1) A case of Excision of the Compound Palmar Ganglion; (2) a Popliteal Aneurysm which had been excised; (3) a Kidney Tumour (suprarenal rest); (4) Colloid Carcinoma of the Stomach; and (5) a Tumour of the Upper Jaw.

Mr. B. G. A. MOYNIHAN: (1) A case of Primary Carcinoma of the Gall-bladder; (2) a specimen from a case of Berger's Amputation; and (3) a specimen from a case of Ileo-sigmoidostomy.

Mr. WHITEHEAD: (1) A microscopical specimen of Primary Tuberculosis of the Mastoid; and (2) a skiagram of a Foreign Body in the Eyeball (the eye was also shown with foreign body *in situ*).

Dr. J. B. HELLIER: (1) A Uterus removed by Abdominal Pan-hysterectomy for Adeno-carcinoma of the Fundus; (2) specimens from Vaginal Hysterectomy; and (3) a large semi-solid Ovarian Tumour removed by Ovariotomy.

Mr. WALTER THOMPSON: A case of Gangrene of the Foot of a Child eight months old.

Dr. T. CHURTON: A girl, aged 13 years, with well-marked Graves's Disease.

Dr. LONG: (1) A specimen of Blood from a case of Lead Poisoning; and (2) an instrument for facilitating the operation of Circumcision.

Dr. W. H. M. TELLING: (1) A specimen showing Pancreatic Calculi; (2) a Double Ureter; and (3) (with the PRESIDENT) a single Tuberculous Kidney.

Dr. C. M. CHADWICK: Abdominal Tumour for diagnosis.

Dr. BRONNER: (1) A case of Deformed Nose recently treated by injections of paraffin; and (2) the Manchester Oxygen Company's new Nitrous Oxide Apparatus.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SURGICAL SECTION.

Ligation of the External Iliac Artery.—Exhibition of Casts and a Specimen.

A MEETING of this section was held on April 4th, Mr. THOMAS MYLES, the President, being in the chair.

Mr. HENRY G. CROLY read a paper on Ligation of the External Iliac Artery for Ilio-femoral Aneurysm and other Tumours. His incision was planned to allow of the artery being tied at least one and a half inches from the origin of the deep epigastric artery. It commenced on a level with the umbilicus and curved downwards, outwards, and inwards, ending at a point midway between the symphysis pubis and the anterior superior crest of the ilium. By making the incision superficial he avoided bleeding. The ligature used was ox-peritoneum or gold-beater's skin, as recommended by Lord Lister and described by Mr. C. A. Ballance and Mr. W. Edmunds. He tied the ligatures in the "stay-knot" of Mr. Ballance, which he considered the most secure of ligation knots and the one least likely to tear the inner coat of the vessel which should never be allowed to occur. The arterial wall was healthy and the patient (who was exhibited) made a good recovery from the operation, which was an extra-peritoneal one. Mr. Croly prepared his ligatures by leaving them for 24 hours in ether and then placing them in a solution of carbolic acid in water of strength 1 in 20. He looked upon the fear of wounding the peritoneum as the reason why the older surgeons tied the external iliac artery so near its distal end. This fear paralysed their action in cases of wounds of the deep epigastric and internal iliac arteries—they looked on wounds of the peritoneum as necessarily fatal, and rather than open it they left patients to die from internal hæmorrhage. He cut no muscular tissue by his incision; on coming down to the muscle he pushed the transversalis fibres aside with his fingers and exposed the artery readily. He had not been able to find the posterior tibial pulse since the operation. (A series of casts and photographs showing the aneurysm before operation, a few days after operation, and when the patient was convalescent, was exhibited.)—Dr. R. LANE JOYNT said that the reference to the old surgeons and their methods reminded him of a painting which he had seen on the wall of a house in Pompeii which represented a surgeon in the act of cutting down on the femoral artery in Hunter's canal. The line of incision was that followed by Hunter.—The PRESIDENT, Dr. L. H. ORMSBY, and Mr. J. LENTAIGNE also discussed the paper.

Mr. KENNEDY exhibited (1) the Vermiform Appendix removed from the right inguinal canal of a child, five months old, during the operation for the radical cure of hernia; and (2) a child, five months old, on whom he had performed the Radical Cure operation for Hernia on the right and left inguinal canals, excised the appendix, and performed circumcision.

Mr. ALEXANDER BLANEY exhibited a girl on whom he had operated two months previously for a Perforated Gastric Ulcer. The operation was performed 19 hours after the rupture. The opening was found near the lower curvature of the stomach, on the anterior wall close to the œsophagus. The patient at first progressed favourably but a week afterwards her temperature rose and on opening the wound a large abscess was found under the left wing of the diaphragm. This was drained by an incision between two of the lower ribs; the original wound was closed and the patient made a complete though somewhat tedious recovery.

LARYNGOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on April 11th, Mr. E. Cresswell Baber, the President, being in the chair.—Dr. V. H. Wyatt Wingrave showed a case of Laryngeal Growth in a man, aged 50 years.—Dr. W. H. Kelson showed a case of a Tumour of

the Larynx springing from the left ventricle in a woman, aged 74 years. It was rounded and greyish in colour; the cords moved freely.—Various members expressed the opinion that it was a cyst.—Dr. StClair Thomson showed a case of Syphilitic Laryngitis possibly complicated with Tuberculosis.—Mr. A. H. Cheatle brought forward an infant, six weeks old, with Congenital Absence of the Front of the Nose and Occlusion of the Anterior Nares. The nasal bones were present but the framework of the nose in front of the nasal bones was absent.—Mr. Cheatle also showed a Rhinolith which had been removed from a woman, aged 50 years. It had probably been forming for 20 years.—Dr. H. L. Lack showed (1) a new form of Laryngeal Forceps which was a modification of Mackenzie's well-known instrument; and (2) a case of Thyrotomy for Tuberculosis of the Larynx. The operation was performed under the impression that the case was one of epithelioma. The patient was a man, aged 66 years, in robust health. He was first seen in April, 1901, and on examination an ulcer with raised edges and some surrounding thickening was observed occupying the centre of the right vocal cord. The movements of this cord were considerably impaired. There was a little bronchitis but there were no signs of tubercle in the chest, nor were there any tubercle bacilli in the sputum. There were no enlarged glands. The diagnosis pointing so strongly to epithelioma, thyrotomy was immediately performed, and the patient made a good recovery. Dr. Jobson Horne, after microscopical examination, reported the growth to be tuberculous. Four months later hard and somewhat fixed glands were noticed in the neck. These were removed and they proved to be tuberculous. The patient had since remained in good health. The removed cord had not been replaced by the usual cicatricial band and consequently the voice had remained aphonic. Dr. Lack considered the chief points of interest to be (1) the very localised character of the disease with the absence of any signs of tubercle in the sputum or chest; (2) the later occurrence of hard, enlarged, fixed glands in the neck; (3) the good results of the operation although performed for tuberculosis; (4) the absence even now of signs of phthisis; and (5) the absence of the cicatricial band which usually replaced the cord.—Dr. L. H. Pegler showed a specimen of Cystic Growth of the Septum which had occurred in a male, aged 30 years. Before removal it was seen to be occupying the left middle meatus and resembled in appearance a polypus, but a distinct attachment to the left side of the septum had been traced by means of the probe. It had been removed with a Mackenzie's snare without difficulty and it proved to be a cyst with a short hollow pedicle. Three days later the patient wrote saying that he had a bad influenza cold and could not attend hospital and five days afterwards he called in a medical man on account of shivering, pains in the limbs, and headache, which symptoms were thought to be due to influenza. Two days later symptoms of meningitis developed and the patient died 15 days after the operation. The question naturally arose whether the tumour could have been a meningocele. The specimen had been submitted to Mr. J. Bland-Sutton who considered that the source of the cyst was a matter of conjecture. Dr. Pegler, supported by Dr. Wyatt Wingrave, thought that the microscopical sections strongly pointed to the fact that the cyst was not a meningocele.—The society, with Dr. Pegler's concurrence, referred the specimen and sections to the Morbid Growths Committee.—Dr. G. William Hill showed a case of Epidermolysis Bullosa with lesions in the mouth and throat, occurring in a woman, aged 37 years.—Dr. J. Donelan showed a case of Tumour of the Right Vocal Cord which had formed during an attack of influenza in a man, aged 50 years.—Dr. StClair Thomson thought that it was probably tuberculous.—Dr. H. W. Fitzgerald Powell showed a specimen of a large Fibroma removed by intra-nasal methods from the left maxillary antrum in a male, aged 18 years.—Dr. W. Permewan showed a specimen of Laryngeal Growth.—Dr. J. Dundas Grant showed a case of Malignant Growth in the Nose in a male, aged 61 years, probably of the nature of alveolar epithelioma, microscopical sections of which were exhibited.—The question being raised whether the growth might not be one of sarcoma the sections were referred to the Morbid Growths Committee.—Dr. Wyatt Wingrave showed (1) a case of Paralysis of the Left Vocal Cord in a female, aged 27 years; and (2) a case of Bulbar Paralysis in a female, aged 23 years.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—An ordinary meeting of this society was held on April 16th when the adjourned discussion on Chronic Affections of the Kidney and Morbid Conditions of the Urine arising therefrom in relation to Balneological, Climatic, and Dietetic Treatment was resumed.—Dr. Leonard L. B. Williams, in reopening the discussion, after referring to some of the points of difference which had arisen between some of the speakers at the last meeting, contended that it was idle to seek for an equable climate with a low relative humidity because a high relative humidity was one of the chief factors in the cause of equability. Cairo had been given as an instance of such a climate, but, as a matter of fact, Cairo, though it might be accounted warm in winter, could not be described as equable. It had a daily range of 25° as against 11° at Sidmouth and other south-western resorts in this country and nine degrees at Funchal, in Madeira. It was a mistake to suppose that a high relative humidity was of necessity a bad feature in a climate.—Dr. Debout d'Estrées (Contrexéville) said that at Contrexéville the diminution and disappearance of sugar in diabetes coincided with the expulsion of uric acid, first under the form of a light cloud formed of small crystals visible only under a full microscopical examination and later with uric acid visible to the naked eye. At Contrexéville, too, the elimination of uric acid was not limited to the time of the cure but it continued for from 10 to 15 days after the cessation of the use of the waters.—Dr. W. Bezly Thorne said that the greater number of the albuminuric patients who underwent treatment by Nauheim baths were benefited. He advocated water-drinking in cases of albuminuria complicated by œdema, provided that the pathological condition of the vessels imposed no insuperable obstacle to vaso-dilatation. He deprecated the ostracism of meat diet and albuminous foods.—Dr. A. Morison opposed the expectation of the marvellous from bath treatment. He maintained that the blander and less "mineral" the drinking water supplied to patients with renal disease was the better it was for them.—Dr. W. Bain (Harrogate) agreed with the opinion that a mild equable climate with a small daily range and a low relative humidity was the best in chronic nephritis. He was in agreement with most of the speakers regarding the beneficial effects of the baths mentioned in some cases of chronic nephritis, but he disapproved of the Turkish bath in most cases of granular kidney, as the initial rise in blood-pressure which invariably took place in the hot room tended to produce cerebral hæmorrhage. He advocated the restriction of the nitrogenous element in the diet—which should be easily digestible and should maintain the nutrition of the body—the prohibition of alcohol, gentle exercise, suitable clothing, plain water to drink, and the avoidance of mental worry.—Dr. F. Parkes Weber remarked that, without any active renal disease, albumin or casts, or both, might be present in the urine from functional defects, due either to past diseases of the kidneys or to congenital inadequacy. This indirectly caused a difficulty in estimating results of treatment. In some renal cases the right amount of water and of albumin to be given in the diet was doubtless that on which the relative waste of albumin with the urine was least.—Dr. E. Solly (Harrogate) agreed with preceding speakers that relatively dry climates were not generally beneficial in chronic renal diseases, but he had found that if suitable clothing was worn and measures were taken to prevent chill much benefit could be sometimes obtained by baths and a mild course of waters even in a bracing climate, especially where the kidney trouble was probably more of a congestive or functional rather than a cirrhotic change.—Dr. C. O. Hawthorne urged that in dealing with patients suffering from chronic interstitial nephritis the old-fashioned lines of treatment had such an amount of success as the nature of these cases admitted. He distrusted proposals to subject these patients with their prematurely senile tissues to extremes, climatic or balneological. Clothing was of the first importance, as chill might readily mean a bronchial catarrh, which in these patients must have an anxious prognosis.—Dr. Williams, in reply, said that the enthusiasts on the subject of blood-pressure as the chief causative factor in renal disease did not appear to have the courage of their convictions. If they had they would practise blood-letting more systematically. That, after all, was the surest way of reducing undesirable pressure.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 10th, Dr. C. H. Willey, the President, being in the chair.—Mr. S. Snell related particulars of Third Nerve Palsy occurring in a baby

when seven weeks old. At birth nothing wrong had been noticed. The child was first seen when the palsy had been present for two weeks.—Dr. J. W. Martin showed a Large Cystic Fibroma taken from a young woman, aged 24 years. Pregnancy was strongly suggested by the general appearance, by the presence of milk in the breasts, by the characters of the abdominal swelling, which was partly resisting, partly semi-fluctuating, and by amenorrhœa of four months' duration. On examination per vaginam there were no changes in the cervix and the sound passed for the normal distance. Operation was performed on Dec. 11th, 1901. On opening the abdominal cavity it was found that the tumour was uterine and that it sprang directly from the fundus for its whole breadth; anterior and posterior flaps were made; the tumour was amputated; bleeding was arrested and the flaps were carefully sewn over. Microscopical examination showed the tumour to be a cystic fibroma. The patient made a good recovery. Fibromata of the uterus were fairly rare at such an early age.—Dr. Martin also showed a specimen of Fibroma of the Ovary removed from a patient, aged 34 years.—Mr. R. Favell showed a large Ovarian Tumour and related a case of Hysterectomy for Fibroid of the Uterus.—Dr. G. Wilkinson read a paper on Fractures of the Leg and described a new method of applying a plaster-of-Paris case.—Mr. A. M. Connell showed specimens illustrating the conditions present in appendicitis and made remarks on the Histology and Morbid Anatomy of the Affection.—Mr. R. J. Pye-Smith opened a discussion on the Treatment of Inflammation of the Appendix and maintained that the safest course in nearly all cases, whether mild or severe, was to operate as soon as the diagnosis could be made. He thought that diagnosis could generally be made within 24 hours, whereas prognosis at that stage was very uncertain. Perforation rarely took place before the end of the second day and abscess did not form till later still, so that by operating during the first 24 hours perforation and abscess were forestalled. On the other hand, mild cases were nearly as safely operated on at a very early stage as in the later quiescent stage and if early operation were the rule they should not meet with the difficult dissections that were now often encountered in operating during the quiescent stage. Nearly all surgeons agreed in recommending operation during an attack in severe cases, and after a single attack (if not during it) in mild cases, so that the adoption of the rule of early operation in all cases would involve scarcely any extra operations. The operation, which would almost invariably consist of excision of the appendix, would be a preventive one and the general result of this early radical treatment would almost certainly be a saving of life and health. Almost the only contra-indications would be the impossibility of obtaining efficient assistance or the presence of such conditions as hæmophilia or severe cardiac or other disease.

KIDDERMINSTER MEDICAL SOCIETY.—A meeting of this society was held on April 11th, Mr. J. Lionel Stretton, the President, being in the chair.—The President showed the following specimens: 1. A Gall-stone weighing 280 grains removed from a woman, aged 60 years, suffering from acute obstruction of the bowels. The stone was found to be jammed in the lower part of the ileum and it was removed by incision of the intestine. The patient made an uneventful recovery. 2. An Enlarged Ovary removed from a girl, aged 23 years, on account of chronic pain, with complete relief of her symptoms. 3. The Appendices Vermiformes removed from two patients, both of whom made uneventful recoveries. 4. Part of the Femoral and Popliteal Arteries from the Amputated Lower Limb of a woman, aged 50 years. She had suffered from rheumatic fever and was suddenly seized with acute pain in the left leg which rapidly became gangrenous and was amputated six days later. The vessel was filled with clots from the site of operation at the upper third of the thigh to below the bifurcation of the popliteal artery.—Mr. Stretton also showed a girl, aged 24 years, upon whom he had operated for Gastric Ulcer which had given rise to very profuse hæmatemesis. On account of her exhausted condition a hypodermic injection of 10 minims of liquor strychniæ and saline transfusion were resorted to before the operation. When the abdomen was opened nothing was discovered by external examination of the stomach, so a longitudinal incision was made in the anterior wall and the bleeding surface was discovered on the posterior wall; it was about as large as a florin and consisted of an abrasion of the mucous membrane showing the mouths of arterioles from which blood was flowing freely. The portion of stomach was inverted and several silk sutures were passed under the bleeding area and tied over it. The wound in the stomach was closed with a double row of interrupted sutures and the abdomen was closed. The girl was very collapsed for the first 24 hours but she made a good recovery.—Dr. A. G. Naylor read notes of a case of Tetanus which had arisen from a boil on the back of the neck of a boy, aged 15 years. Difficulty of swallowing and stiffness of the jaw began 10 days after the appearance of the boil and death ensued 10 days later. The treatment consisted of 15-grain doses of chloral and potassium bromide every four hours, hypodermic injections of a quarter of a grain of morphia, inhalations of chloroform, and hypodermic injections (six in all) of 1500 units of anti-tetanic serum.—Dr. O. C. P. Evans opened a discussion on Vaccination.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on April 9th, Dr. Thomas Harris, the President, being in the chair.—Dr. Joshua J. Cox read some Notes upon a case of Megrim with associated nervous symptoms. On March 18th, 1898, a married woman, aged 25 years and in the fourth month of her first pregnancy, was suddenly seized with feelings of "pins and needles" in the skin over the lower part of the abdomen. These sensations travelled up to the face, down into the neck, and along the right arm. She became aphasic, lost the muscular power in, and had some anæsthesia of, the right arm and hand. The attack lasted for about two minutes, after which the characteristic megrim headache developed and continued for 12 hours. During the following month she had several similar attacks, and she distinguished clearly these megrim headaches from the headaches of dyspepsia, with which she had been familiar for years. Dr. A. Emrys Jones examined her eyes and he reported that in the right eye there was a quarter of a dioptre of hypermetropia, while in the left eye there were two dioptres of myopic astigmatism, axis 50°—. Dr. Jones prescribed appropriate glasses. It was interesting to note that this patient had been quite free from megrim since she began to use glasses, but that she still had occasionally the headache from dyspepsia.—Mr. Joseph Collier showed a patient who had been operated upon for Intra-peritoneal Rupture of the Bladder and he made some remarks upon the technique of operation in such cases.—Mr. Stanmore Bishop gave a short account of three cases of Intestinal Surgery, two cases of Appendicitis, and one of Intussusception.

Reviews and Notices of Books.

A Text-book of Pathology for the Use of Students and Practitioners of Medicine and Surgery. Edited by LUDVIG HEKTOEN, M.D., Professor of Pathology in Rush Medical College in affiliation with the University of Chicago; and DAVID RIESMAN, M.D., Professor of Clinical Medicine, Philadelphia Polyclinic. With 443 Illustrations. Two Vols. London and Philadelphia: W. B. Saunders and Co. 1901. Pp. 1245. Price 35*s*.

THE object of this publication is to place in the hands of the medical student and the physician a comprehensive text-book upon the essential principles and facts in general pathology and morbid anatomy. Recognising that pathology has made such enormous strides in recent years that it is almost an impossibility for one man to make himself fully conversant with the entire field of knowledge in this branch of science, the editors have followed the plan adopted in many text-books dealing with other branches of medical science and have secured for each of the major departments the services of a contributor who is thoroughly familiar with the particular subject. This is a plan which has been adopted with success in many of the more modern publications. The authors are all connected with American institutions; so that some of the names are not well known in this country.

The work is divided into two parts—General Pathology and Special Pathology—the former dealing with general

morbid processes, tumours, pathogenic micro-parasites, intoxications, and the like, and the latter with diseases of the different systems and organs. The section on General Morbid Processes is written by Dr. Ludvig Hektoen (one of the editors) and contains much excellent work. His remarks on General Circulatory Disturbances will well repay perusal. Dr. Hektoen possesses the power of expressing his ideas in particularly attractive language; he states his facts and marshals his conclusions in a manner which is convincing and which rivets the attention of the reader. The sections on Thrombosis and Embolism convey an accurate expression of the morbid processes involved and the resulting effects. His description of the retrogressive metamorphoses is also good. He is fully conversant with the most recent developments in pathology, as is shown by his consideration of the various forms of hæmatogenous pigmentation, the account of hæmosiderin being especially noteworthy.

The part of the work describing the "tumours" is by Dr. A. P. Ohlmacher, professor of pathology, North-Western University School, Chicago. We note more especially his description of "the so-called benign tumours," including fibroma, lipoma, chondroma, myoma (including rhabdomyoma), and the various forms of angiomata—namely, hemangioma and lymphangioma (illustrated by two excellent plates). The title of the division "Pathogenic Micro-parasites," also by Dr. Ohlmacher, may at first seem misleading, but the author is careful to point out that as it is now customary to present the subject of bacteriology in the medical curriculum as a course separate from pathology it is superfluous to enter into elementary descriptive details in this section of a text-book on pathology or to encumber it with technical minutiæ; consequently a description will be found of the different pathogenic organisms but details are not given as to laboratory work. We think that Dr. Ohlmacher has acted wisely in adopting this course. Want of space prevents comment on all the articles in this portion of the work but we may draw attention to the section on Intoxications, by Dr. V. C. Vaughan, professor of hygiene in the University of Michigan. His remarks on the lesions caused by the mineral poisons are full and instructive and they contain much that is not to be found in other text-books on pathology. Another valuable contribution is that by Dr. H. F. Lewis, associate in obstetrics and gynæcology in Rush Medical College, on Teratology. The deviations from the normal in the development of the embryo are fully described.

Passing to the second part of this work, that on Special Pathology, we find again much to praise. The section on the Blood and the Blood Making Organs is by Dr. R. C. Cabot, assistant in clinical medicine, Harvard Medical School. He gives full consideration to the large amount of work which has recently been accomplished with regard to the significance of the occurrence of the various forms of red and white corpuscles. His account of the blood changes in pernicious anæmia is also of value, whilst he pays due attention to the changes which are found in the spinal cord in connexion with that disease. The Pathology of the Nervous System is discussed by Dr. Joseph Collins, professor of nervous and mental diseases in the Post-graduate School, New York City. The descriptions of various lesions are lucidly given without undue reference to the huge mass of literature which has sprung up on this subject during recent years and the most modern views are duly recorded. The Pathology of the Diseases affecting the Respiratory Tract is described by Dr. J. M'Farland, professor of pathology and bacteriology in the Medico-Chirurgical College, Philadelphia. This section throughout is well written and the various morbid changes are described in terms which can be easily understood by the student. The other systems of the body all receive due notice, including the ductless glands. The pathology of the chin, eye, and ear is considered in different sections.

The illustrations, plain and coloured, throughout the whole work are excellent and they add considerably to the value of a thoroughly trustworthy text-book of pathology.

Outlines of Practical Physiology: being a Manual for the Physiological Laboratory, including Chemical and Experimental Physiology with reference to Practical Medicine. By WILLIAM STIRLING, M.D., Sc.D. Edin., Brackenbury Professor of Physiology and Histology in the Owens College and in Victoria University, Manchester. Fourth edition, revised and enlarged, with 465 Illustrations. London: Charles Griffin and Co., Limited. 1902. Pp. 624. Price 15s.

BY unremitting care and attention to a work that was originally small and unpretending Professor Stirling has produced the best text-book on practical physiology that has appeared since the publication of Sir J. Burdon Sanderson's and his collaborator's well-known "Handbook to the Physiological Laboratory," published in 1875. The text is full and accurate and the illustrations are numerous and well executed. The book is divided into two parts, the first of which is devoted to Chemical Physiology and the second to Experimental Physiology. The first part, naturally, is occupied with the characters of, and the tests for, the proteids, fats, and carbohydrates and, after these have been discussed, with the chemical composition of the various liquids of the organism, as blood, bile, pancreatic juice, and urine. In each case a series of exercises is given. Thus in the chapter on Hæmatocytometers Professor Stirling gives a full description of Gowers' instrument and the mode in which it should be used; of the Thoma-Zeiss hæmocytometer; of Oliver's hæmocytometer; of the hæmoglobinometer of Gowers and the same instrument with Haldane's modification; of Oliver's hæmoglobinometer; and of Fleischl's hæmometer. T. W. Tallqvist's hæmoglobin scale and isotonic solutions are also described. The accounts of these various instruments are followed by exercises on the determination of wave-lengths, of the absorption bands of oxy-hæmoglobin, of reduced hæmoglobin, and of carbonic oxide hæmoglobin. The chapter on the Urine, so important both to the student and to the practitioner, is admirably drawn up. Its physical characters are first described, then the mode of determining the amount of acid which it contains; the several inorganic constituents are then fully given followed by an account of the organic constituents, and especially of urea and uric acid. For the estimation of total nitrogen the author appears to prefer Dr. Kjeldahl's apparatus which is in use at Owens College. Successive sections deal with the abnormal constituents—albumin, sugar, blood, and bile.

In the second part full descriptions are given, usually with drawings, of various galvanic batteries and keys, galvanoscopes, commutators, rheocords, and inductorium, chronographs, and myographs with the mode of making a muscle-nerve preparation. In addition to this extended account of apparatus Professor Stirling suggests the performance of, literally speaking, hundreds of experiments, the majority of which can be executed without pain or even discomfort either on small animals or on the experimenter himself. Thus under the head of Instruments for Measuring and Recording Blood-pressure in Man Professor Stirling describes the hæmodynamometer or pulse-pressure gauge of G. Oliver, the sphygmometer of Hill and Barnard, the sphygmomanometers of von Basch and of Mosso, the sphygmochronograph of A. Jacquet, the clinical polygraph of J. Mackenzie, and others. Nearly all these instruments are illustrated by drawings.

Professor Stirling's diligence has enabled him to accumulate a very large number of experiments bearing on the physiology of the sense organs. We do not think the reader

will anywhere find so remarkable and interesting a collection of experiments on the eye, ear, and skin as are here given. They can be for the most part made with simple apparatus and at small cost. In this respect the work will prove a useful reminder even to lecturers.

Die Syringomyelia. By Dr. HERMANN SCHLESINGER. Second and Enlarged Edition. With 88 Illustrations. Leipsic and Vienna: Franz Deuticke. 1902. Pp. 611. Price 17 marks.

IF any testimony were needed to prove the recent growth of knowledge in the special departments of medicine the volume before us, consisting of 600 pages of closely printed matter on the single subject of syringomyelia, would furnish ample and convincing evidence. This monograph, modestly described as representing a part of the anatomical and clinical observations made by the author on 120 clinical, and 30 anatomical, cases, is one of the many valuable contributions to neurology which have emanated from Professor Obersteiner's laboratory. The present volume is a greatly enlarged and practically re-written edition of a book which appeared in 1894. Since that time 600 important contributions to the subject of syringomyelia have been published in various periodicals, bringing the bibliography of the subject up to the enormous total of 1175 independent papers.* This bibliography, which is appended at the end of the book, is a complete index to the literature to the end of August, 1901, and the evident care bestowed upon this onerous compilation is a practical guarantee that no important detail bearing on the subject of syringomyelia has escaped the notice of the author or been omitted from the text. It would, perhaps, be tedious to follow the author through the first 300 pages of this remarkable work, since for the most part they are occupied with the description of the symptoms of the disease and of the various types which have from time to time been distinguished by authors. The information which is thus ably summarised will, however, be of the utmost importance to those who are interested in this pathological condition and to those who may be in difficulties as to the establishment of a definite diagnosis.

The second half of the volume is more immediately concerned with theoretical matter and with the speculative interpretation of the clinical observations and phenomena described in the earlier chapters. It affords, therefore, a better opportunity of judging of the real merits of Dr. H. Schlesinger's work in both its literary and its scientific aspects. We have read this section of the book with interest and in our opinion it represents scientific work of the very highest order and a record of indefatigable labour of which any pathologist may feel justifiably proud. It has been customary to define syringomyelia as a gliomatous new formation about the central canal of the spinal cord with cavity formation. At least, this is the description which finds a place in several of the more recent text-books of medicine. The disease has, in fact, been regarded in the light of a definite anatomico-pathological entity with a fairly constant train of symptoms. Dr. Schlesinger's views, which have, indeed, for some time past influenced the trend of opinion with regard to this pathological condition, appear in this later edition to take a more definitely crystallised form and to be stated with the confidence of conviction. His definition of this progressive spinal affection clearly proves that he does not regard gliomatous cell-growth as a necessary or essential concomitant of the excavation of the central canal which occurs in all forms of syringomyelia, and he lays the very greatest stress upon the extreme variability of the etiological factors which lead to its causation. The conception of syringomyelia as an essential gliosis at once narrows its etiology to those factors which are recognised as operative in the formation of tumour. Dr. Schlesinger, however, by practically proving that gliomatous cell formation is not an essential feature of the disease at once broadens the whole question of the pathogenesis of syringomyelia and at the same time introduces certain factors into the etiology which would necessarily have to be excluded according to a more restricted anatomical definition. The predisposition to the disease is, according to Dr. Schlesinger, to be sought in anomalies of development affecting the central canal or its immediate neighbourhood. These anomalies may occur in utero or at an early post-natal period. They may take a variety of forms and may persist throughout life without leading to the definite and progressive symptoms which are characteristic of the fully-established disease. Some small or undetermined exciting cause may, however, apply the necessary stimulus to the complete evolution of a syringomyelia. Among such exciting causes may be mentioned traumatism, a rise in the intracranial blood-pressure, and infective diseases such as influenza. Syphilis and other chronic inflammatory processes, including those which occur in blood-vessels, have a less determinate influence; while leprosy, which has been supposed to have somewhat intimate relationship with the disease, may, according to the author, be excluded from the etiological factors. To indicate the divergencies of Dr. Schlesinger's views as to the status of this condition in the classification of diseases from those which are usually held we append his suggestions for distinguishing the varieties which may be included under the generic term "syringomyelia":—(*a*) true hydromyelia (malformation); (*b*) true tumour formation with excavation; (*c*) syringomyelia gliosa; (*d*) syringomyelia in consequence of vascular affection without gliosis; and (*e*) pachy- and lepto-meningitis, with excavation. The inclusion of hydromyelia, or "hydromyelus," as it is generally called, among the varieties of syringomyelia makes this classification of particular interest and will probably excite some criticism from pathologists who take a narrower view of the condition.

Cliniques Médicales Iconographiques. (*Clinical Medicine Illustrated.*) By M.M. P. HAUSHALTER, G. ÉTIENNE, L. SPILLMANN, "Agrégés" of the Faculty of Medicine of Nancy, and C. THIRY, formerly "Interne" of the Hospitals of Nancy. With 62 Plates containing 398 figures. Paris: G. Carré et C. Naud. 1901. Pp. 382.

WE are informed in the preface to this interesting volume that the object of the work is to collect and to publish a series of photographs which the authors have taken from time to time during several years past of various cases which have been met with in the wards and out-patient rooms under the control of the Faculty of Nancy.

The photographs have been arranged as far as possible in groups representing various classes of diseases. They indicate very clearly the characteristic forms and appearances seen in cases of progressive muscular atrophy, infantile paralysis, facial paralysis, peripheral neuritis, hydrocephalus, exophthalmic goitre, myxœdema, rickets, rheumatism, and the like. Many of the plates represent certain cutaneous lesions. Amongst the illustrations are some which indicate the ordinary forms of diseases which are commonly met with, whilst others are intended to show instances of rare diseases or unusual forms of common maladies. All the figures, however, have been selected with some particular object.

The most instructive photographs are certainly those which reproduce the characteristic appearance of certain affections of the nervous system. The general plan adopted is to give a full description of the disease, chiefly from a clinical point of view, with reports of cases, and then to show reproductions of photographs to illustrate those cases. The

plates illustrating progressive muscular atrophy indicate at a glance the appearances produced when the various groups of muscles are affected. The patients are represented in characteristic attitudes and throughout the whole work the greatest care and thought are apparent in arranging the various details. An interesting plate exhibits the photographs of a man and his two daughters all affected with progressive muscular atrophy of the facio-scapulo-humeral type. The series of photographs illustrating the characteristic deformities occurring in peripheral neuritis are also very good. Some of the more advanced cases, such as are shown in the plates, are but rarely met with. Excellent also are the illustrations of the results of congenital spastic paraplegia. The various attitudes depicted are most characteristic. There are several illustrations of the trophic disturbances associated with tabes dorsalis. Facial paralysis is naturally well illustrated by photography, and the authors have reproduced several typical cases. We may also draw attention to the photographs of cases of myxœdema and exophthalmic goitre.

The illustrations of cutaneous lesions, although good photographs, are not so effective. Coloured plates are necessary in order to bring out characteristic lesions. Some cases of nævus, however, are well shown, as are also some instances of deformities. Amongst the best of the photographs of diseases of the skin are those of erythema multiforme dermatitis herpetiformis and some syphilitic lesions. The joint lesions of rheumatoid arthritis are also well pourtrayed.

We can speak in terms of high praise of this publication which will prove of great value as a work of reference.

Pediatrics. By THOMAS MORGAN ROTCH, M.D. Third edition, re-arranged and re-written. Illustrated. London and Philadelphia: J. B. Lippincott and Co. 1901. Pp. 1121.

As the chief exponent of the percentage feeding of infants—a system which has been widely adopted in America—it is scarcely surprising that Dr. T. M. Rotch should have been called upon to publish a third edition of his "Pediatrics." In this work the far-reaching possibilities of the method, not only in the prevention but also in the treatment of diseases, are presented in a more systematic and complete form than has been attempted by any other author or in any other publication. In taking up his parable for the third time Dr. Rotch is able to record several improvements which have been effected in his method of infant feeding. And his extended experience in the application of the system in the treatment of symptoms has placed him in a position to supply his readers with much valuable information which they cannot obtain elsewhere. In the early chapters of Dr. Rotch's book considerable space is devoted to the anatomy, physiology, and normal development of infants and children. The size and development of the infantile stomach—a favourite subject with Dr. Rotch—is even more fully described than in the previous edition of "Pediatrics." He draws attention to the fact that the size of this viscus presents differences in the case of artificially- and breast-fed infants, the gastric capacity being much greater in the former than in the latter, an observation which emphasises the importance of exact quantitative measurements in artificial feeding for the prevention of dilatation of the stomach. The growth of the intestine is another developmental question which is largely dependent on diet. The great variabilities which are noticeable in the length of the intestine appear to bear no relation to the rapidity of the general growth of the infant but to have a distinct dependence on the quantity and the quality of the food. In this connexion the observations of Marfan, though not referred to by Dr. Rotch, are distinctly pertinent, for this observer notices the enormous increase in the length of the intestine in rachitic children and in others who have been exposed to indifferent methods of feeding.

In the nomenclature which is applied to the diseases of children as described in this volume the author's ambition has clearly been to attain precision and accuracy. In diseases of the mouth he adopts the nomenclature which has been accepted by the American Pediatric Society. This classification divides the various forms of stomatitis into four main divisions which are differentiated according to their pathological characters as catarrhal, herpetic, ulcerative, and mycetogenetic. Each of these is further sub-divided into distinct varieties. With regard to the nomenclature of diseases of the gastro-intestinal tract again the one drawn up by the American Pediatric Society is adopted by Dr. Rotch. An examination of this classification indicates that as far as possible it is founded on an etiological basis. When, however, the causative factors are in doubt the nomenclature is designed with a view of aiding the memory by recalling the salient characteristic of the particular diseases. The table of classification of diseases of the digestive tract appears on page 773 and should be carefully studied. Both gastric and intestinal diseases are divided into three primary groups: (1) Developmental, (2) Functional, and (3) Organic. These groups are again sub-divided into classes and varieties. Under Functional Diseases appears the sub-group of Disorders of Elimination. Little is known at the present time as to the precise characters of this class of gastro-enteric disorder. It is believed, however, that certain toxic substances are eliminated by the mucous membrane and may possibly be the cause of the many obscure symptoms which perplex the pathology of gastro-intestinal diseases. Before leaving the subject of nomenclature we may refer with approval to the term "laryngo-spasmus" which is substituted for the more cumbrous expression "laryngismus stridulus" usually employed in this country to distinguish this spasmodic neurosis.

It is quite possible that some of the more conservative of the readers of this book who may refer to Dr. Rotch's work for guidance in the treatment of diseases will feel disappointment that the portions of his work which deal with this subject are not designed on the conventional lines of therapeutic procedure. The use of drugs is relegated to a position of quite subordinate importance, while hygienic and dietetic measures completely overshadow and override all other methods of treatment. To take, for example, the case of laryngo-spasmus. The treatment enjoined does not contain a single reference to a pharmaceutical preparation. The recognised merits of chloroform by inhalation for the relaxation of the spasm hardly warrant omission from any complete directions for treatment. Again, in connexion with catarrhal and other affections of the bowel practically no drugs, with the exception of the salts of bismuth, are considered worthy of consideration, while recourse to opium is regarded as a dangerous and harmful proceeding. The treatment of symptoms by alterations in the percentage composition of the food is doubtless a method for which much may be said, but at the same time it must be remembered that excessive zeal in this direction is quite liable to misinterpretation. In the section on Infantile Scurvy the treatment is summed up in the following short sentence: "Fresh milk and orange juice." The *rationale* of this undoubtedly excellent treatment is nevertheless hardly obvious on the assumption that there is no evidence of sterilisation being a factor in the causation of scorbutus. But the sterilisation of milk, as well as the mechanical processes to which modified milk is subjected in laboratory preparation, have so frequently been credited with conducing to infantile scurvy that we had expected in this new edition of "Pediatrics" to find this charge fairly and squarely met. So far from this being the case, we find the conflicting statements that "sterilisation does not tend to produce scorbutus," but that

"it may be cured by administering unsterilised varieties of food."

Among the new features which are introduced into the present edition those which refer to the symptoms and diagnosis of diseases of the blood, the morphology of its cellular elements, and their enumeration must be regarded as particularly complete and fully representative of the newer methods of hæmatology and of the most recen advances in bacteriolcgy. The illustrations and coloured plates are numerous, for the most part original and in conformity with the general practical character of the book. They are designed mainly with the view of elucidating the clinical aspects of disease. An exception, however, must be made in the case of the illustrations which belong to the pathology of the gastro-intestinal tract. These both of macroscopic and microscopic specimens are many in number and are very beautifully drawn.

The Play of Man. By KARL GROOS, Professor of Philosophy in the University of Basel, Author of the Play of Animals. Translated with the author's coöperation by ELIZABETH L. BALDWIN, with a preface by J. MARK BALDWIN, Ph.D., Hon. D.Sc. Oxon., Professor in Princetown University. London: William Heinemann. 1901. Pp. 412.

"IN this work," the author says, "my aim is to present the anthropological aspects of the same subject treated of in my investigation of animal play published in 1896, which may be said to be a pioneer attempt in its department." The whole subject is for the convenience of description, as Gray has it, divided into three parts: (1) playful experimentation; (2) the playful exercise of impulses of the second or socionomic order; and (3) the theory of play. The points of interest in regard to playful experimentation refer to the activity of the sensory apparatus, of the motor apparatus, and of the higher mental powers. The playful exercise of impulses of the socionomic order are considered under the headings of Fighting, Love, Imitative and Social Play. Finally, in the third part of the book the theory of play is considered from the physiological, biological, psychological, æsthetic, sociological, and pedagogical standpoints respectively.

It will be seen from this brief summary of the contents of the book that the subject is exhaustively treated. The author in his introductory chapter says that "while many have undertaken by various methods to classify human play satisfactorily, in no single case has the result been entirely fortunate." He perhaps from reasons of modesty, does not include his own work in this general review of the efforts which have been made by previous authors, and although he confesses that he hardly hopes that his classification will satisfy all demands, he reassures himself with the reflection that "absolute systematisation is and must remain in the vast majority of cases a mere logical ideal." The author maintains that the "governing force of instinct" is proved by a study of animal play, and that this question was finally settled by himself in a book which he published in the year 1896.[1] The studies which he had then made led him to arrive at the conclusion that in the higher animals certain instincts exist which produce activity that is without serious intent and the various phenomena thus induced are included in the word "play." In the case of a child opportunity is given through the exercise of innate dispositions "to strengthen and increase his inheritance in the acquisition of adaptations to his complicated environment, an achievement which would be unattainable by mere mechanical instinct alone." This is not an idea which can be seriously disputed and it has doubtless been often expressed in other and simpler language. At any rate, the fact that the play of children is good for muscular development and for the training of the hand and of the eye are fortunately things which not only are, but have long been, generally recognised in England, and play has always formed a prominent feature in the training of the youth of this country. We have happily as a nation not suffered from the doctrines of one Tollner who is described as a pietist and who, we learn, has taught that "play of whatever sort should be forbidden in all evangelical schools, and its vanity and folly should be explained to the children with warnings of how it turns the mind away from God and eternal life and works destruction to their immortal souls." The author does not encourage this view but agrees with the English one that play is useful both in its physical and mental aspects. "A discerning educator," he says, "could not afford to ignore so important a coadjutor." It is doubtless well that such an opinion should be learnedly given by a Swiss Professor of Philosophy for the benefit of Germans, but English people have so long discovered the fact for themselves that they hardly need instruction on the point from a foreign point of view, for when it comes to examining the book in detail international and ethical differences are apparent and the ordinary Briton, on reading certain statements it contains, will be inclined to be moved to laughter. "The human leg," the author tells us, "is a favourite and variously used propelling implement"—a statement which nobody can deny. "Kicking is a primitive method of fight which children make early use of and the famous incident in the French Council Chamber is sufficient to establish its adaptability to the requirements of the highest culture." That is a statement which might not command universal assent.

Some of the commonplace statements contained in the work are intensely amusing from the fact that they are made in the most pompous language imaginable and many of the inferences drawn from the observations are certainly open to other explanations than those given. It must suffice to mention these points. Enough has been said to show the plan on which the book is written and to give a general idea of its contents.

[1] Die Spiele der Thiere, Jena.

A System of Physiologic Therapeutics. Vol. IV., Climatology; Book II., Health Resorts in Africa, Asia, Australasia, and America, with a special article on the Hawaiian Islands by Dr. TITUS MUNSON COAN of New York. London: Rebman. 1901. Pp. 420. Price 10*s.* 6*d.* net.

THIS volume contains little of general interest to English physicians. A great part of it is devoted to a description of American health resorts and it is certain that few English medical men would be at all inclined to send their patients to so great a distance when there are within easy reach so many places of established credit in countries which have the advantages of an old civilisation. The chapter on the Hawaiian Islands is contributed by the editor who writes enthusiastically of its climate. Mosquitoes appear to be the only serious nuisance from which the inhabitants suffer and these are so troublesome and numerous that "mosq bars" are necessary throughout the whole group of island No information is given as to what varieties of the insects are found but it is said that malarial diseases are unknown. Cases of leprosy still occur but Europeans are not frequently affected. Dr. Coan considers Hawaii an especially favoured place for the rearing of children but cholera infantum is a frequent cause of infantile mortality.

The portion of the book which deals with "climato-therapeutics" is divided into two parts, of which the first is devoted to a general consideration of the management of patients at health resorts and the second to special therapeutics. The various "cures" described need not all be taken too seriously and a reader with some sense of humour will be occasionally diverted by things that he will come across in an otherwise dull book. Dr. Benno Laquer's description

of his grape-cure is a case to the point. A reader who desires such information may learn in what cases the juice only should be used and in what cases the skins should be "chewed before being ejected." He may accept the comfortable assurance that "the teeth may afterwards be cleansed" and that "a gentle walk when the grapes have been consumed" is indicated. In regard to the "excessive use of strawberries" a grave caution is given. The results may prove unsatisfactory if they be taken "without medical advice." The affectation that a fruit because it is recommended by a medical man is *ipso facto* beneficial tends to bring ridicule on the whole medical profession. There is somewhat too much of this sort of writing in the book. In regard to bathing it has been recommended that no one should go into the water until he has learned to swim. It was considered difficult to follow this advice but ultimately a "professor of natation" conceived the idea of teaching his art on dry land. Dr. Coan gives some dark counsel as to sea-bathing. He says: "Unless thoroughly accustomed to it one should never bathe in the open sea before breakfast."

LIBRARY TABLE.

Essentials of Diseases of the Nose and Throat. By E. BALDWIN GLEASON, S.B., M.D., Clinical Professor of Otology in the Medical Chirurgical College; Aurist in the Medical Chirurgical Hospital; Surgeon in Charge of the Nose, Throat, and Ear Department of the Northern Dispensary; one of the Laryngologists of the Philadelphia Hospital. Third Edition, Revised and Enlarged. London: Henry Kimpton. 1901. Pp. 241.—In reviewing a previous edition of this book, which is issued in the form of questions and answers, we said that we were not disposed to approve of teaching by this method. The section on diphtheria is contributed by Dr. M. P. Warmouth, late resident physician at the Philadelphia Municipal Hospital, where during his term of office more than 5000 cases of diphtheria were treated. The opening pages of the book are devoted to questions and answers describing the various parts of the apparatus and various instruments used in laryngoscopy. The careful description which is given of the various procedures would be sufficient to enable most people of average intelligence and of slight anatomical knowledge to make a very good attempt at laryngoscopy; in fact, there are few, if any, details which have escaped the author. In the catechism on rhinoscopy one of the answers commences, "The author's nasal dilator," which gives the impression that Dr. Gleason occasionally finds a difficulty in conveying the knowledge which he wishes to impart to the catechumen in the form that he has chosen. From the answer to the question, "How are the posterior nares examined?" the general impression that would be derived by the beginner is that, though the examination may present some difficulties yet they would not be very serious, whereas in the case of the beginner we know of nothing more tedious and requiring greater perseverance to accomplish than a proper examination of the naso-pharynx, even in easy cases.

Internal Anatomy of the Face. By H. N. CRYER, M.D., D.D.S., Professor of Oral Surgery, Department of Dentistry of the University of Pennsylvania. Philadelphia: S. S. White, Dental Manufacturing Co. 1901. Pp. 176.—Dr. Cryer's work is profusely illustrated by very beautiful photographic reproductions, numbering in all 150. The main contention of the author is that a typical bone of the head is of rare occurrence and, on the contrary, that the majority of specimens present some departure from the normal, and that if a typical bone is arrived at by a print taken from the superimposed negatives of a thousand specimens, not more than two or three of the negatives would be found which would exactly correspond with this print. The work opens with a very full description of the lower jaw, especially dealing with its relation to the teeth, and, as would be expected, there is a very complete knowledge evinced in those parts of the book which treat of subjects that are more especially of interest and importance to the dental surgeon. Dr. Cryer depicts some admirable examples of dental abscesses penetrating into the cavity of the antrum. He does not hold that this is the more usual route of infection by which suppuration in the maxillary sinus is set up. He considers that it is mainly on account of the common communication between the nasal chamber, the frontal sinus, and the ethmoidal cells of the maxillary sinus, that infection is conveyed to the antrum and he makes the interesting statement that more teeth are sacrificed for disease of the antrum than the cases in which the teeth have infected the antrum justify. The chapter on Modification of the Normal Shape of the Bone through Abnormal Forces is extremely interesting, as is also what is said on the influence of muscular action on the shape of the various bones of the skull. Dr. Cryer's book is of considerable value, especially to the dental surgeon and the rhinologist, as putting before them in an essentially practical way the surgery of those parts which are their special study. We think that it will prove a helpful book of reference and that it should find its way into all medical libraries.

Dose-book and Manual of Prescription-writing. By E. Q. THORNTON, M.D., Ph.G., Demonstrator of Therapeutics, Jefferson Medical College, Philadelphia. 1901. Second edition, revised and enlarged. London and Philadelphia: W. B. Saunders and Co. Pp. 362. 8vo. Illustrated. Price 6*s.* 6*d.*—The opening chapter of this book is devoted to tables of weights and measures in both the apothecaries' and the metric systems. The illustrations are unnecessary, in our opinion, seeing that the book is intended for young men and women of good education and average intelligence. Thus drachm, scruple, and gramme weights are represented, and there are little drawings of the minim- and ounce-glass measures that are used in dispensing. Then there is a table of "equivalents of apothecaries' in metric weights"—the equivalents in grammes of a thousandth, a two-hundredth, a fiftieth, an eighteenth of a grain, and so on up to 59 grains. There is another table of one to 100 ounces in their metric system equivalents. The second chapter deals with prescription-writing and there are instructions such as a student would receive in his first dispensing lesson. These are followed by a little Latin grammar giving the declensions of nouns and adjectives and the conjugations of verbs. The only feature of this chapter which seems to belong, properly speaking, to the subject of "prescriptions and doses" is a short paragraph on Incompatibilities. The average medical student is not too familiar with elementary Latin, but it seems to us that the tone of the teaching in this little book is far too juvenile and will tend to prevent a student thinking for himself. In these days of cram-books and "science for the simple" we have our thinking done for us far too much and too often. Thirteen pages of doses of officinal and unofficinal drugs follow, and then there is an appendix containing a little—a very little—toxicology. The antidotes mentioned are just jotted down in a list after the poisons to which they refer and no attempt is made to discriminate between them.

Directions for Class Work in Practical Physiology. By E. A. SCHÄFER, LL.D. Aberd., F.R.S., Professor of Physiology in the University of Edinburgh. With Diagrams. London: Longmans, Green, and Co. 1901. 8vo. Pp. 76. Price 3*s.* net.—This little manual by Professor Schäfer is intended for the instruction of medical students who, as a rule, have at their disposal but little time to work at physiology.

Accordingly it deals only with the quite elementary physiology of muscle and nerve and of the vascular and nervous systems. It contains directions for the construction of apparatus which with a little ingenuity most men could make for themselves at the cost of a few shillings and for the performance of experiments which can easily be made upon half a dozen decerebrated and pithed frogs. With so experienced a teacher as Professor Schäfer it is not to be expected that any errors have crept into the work; the only question is whether the scheme followed might not have been slightly extended so as to include some of the phenomena of the organs of sense. The arrangement of the chapters is as follows:—The Construction of Batteries, Keys, and Inductorium; the Mode of Making a Nerve-muscle Preparation; the Mode of Recording a Muscle-twitch, with the Effects of Heat, Cold, and Fatigue; the Action of Curare and Veratrin; the Effect of Two Successive Stimuli upon a Muscle-nerve Preparation; the Form and Sound of Voluntary Contraction of Muscle; the Work of Muscle; the Rate of Transmission of Nerve Impulse; Electrotonus; Pflüger's Law of Contraction; the Paradoxical Contraction of Muscle; the Capillary Electrometer and the Galvanometer; the Heart and its Nerves; the Mode of Effecting Perfusion of the Frog's Heart; the Chief Vascular and Respiratory Mechanisms in Man; and the Phenomena of Reflex Action. Each of these subjects is followed out so far as the student needs to know and the volume will form a useful addition to any course of lectures on physiology.

Mosquito Brigades and How to Organise Them. By RONALD ROSS, F.R.C.S. Eng., D.P.H., F.R.S., Walter Myers Lecturer in Tropical Medicine, Liverpool School of Tropical Medicine; Major, Indian Medical Service (retired). London: Philip and Son. 1902. Pp. 96. Price 3*s.* net.—The object of this little book is set out clearly in its title. The subject is divided into things to be learnt and things to be done and the two chapters on these matters are followed by summaries of the objects to be accomplished and the methods by which they are to be carried out. A section is devoted to what the author calls "Miscellaneous Remarks" which include advice as to when to start and when not to start mosquito brigades, an account is given of other methods of preventing mosquito-borne diseases and a comparison is instituted between the method advised and methods which are not recommended. The probable effect of anti-mosquito measures on mosquito-borne diseases is then considered and there are a few remarks on "Sanitary Anarchy." An appendix contains a history of the war against mosquitoes at Hong-Kong, Lagos, Staten Island, New York, Havannah, and Sierra Leone. There is a short and not very complete bibliography in which the reader is warned that the "historical passages in many of the Italian works are largely apocryphal" and that "the works of B. Grassi of Rome are especially bad in this respect and should not," the author thinks, "be included in any list of honest scientific books." Major Ross's book will be found of value to a larger circle than that for which it was primarily written. It should prove of the greatest use to all those who go to places infested by mosquitoes. It will also be of great interest to many busy practitioners of medicine in England who wish to keep pace with the advances made in their profession. The book is clearly written, devoid of useless technicalities, and well printed. A third class of readers to whom we recommend the work is that large body of intelligent students who wish to get a general grasp of the subject and who can do so more easily by running through an account of all the facts of the case than by committing to memory a condensed paragraph of the interpretation of which they are not fully cognisant.

Formulaire Aide-Mémoire de la Faculté de Médecine et des Médecins des Hôpitaux de Paris. By Dr. FERNAND ROUX. Fifth edition. Completely rewritten and increased in size by Dr. LEMANSKI. Paris: G. Steinheil. 1902. Pp. 538. Price 4 francs.—This formulary is intended to provide the practitioner with suggestions as to the treatment suitable for various diseases in a handy form for rapid reference. But it possesses a feature of importance which renders the volume doubly welcome in that the lines of treatment laid down are in all cases such, and only such, as have gained the approval of a professor of the Faculté de Médecine or of a practitioner in the hospitals of Paris. As a result the work is a mirror of therapeutics as practised in Paris at the present day. The first 480 pages of the book are devoted to the treatment of the different diseases in alphabetical order from Abcès chauds to Zona. In every case the name of the medical authority is attached to a brief outline of his method of treatment. In most cases formulæ are given when combinations of drugs are ordered; perhaps the most striking point about these formulæ is the extensive use that is made of the various organic compounds, including organic salts, alkaloids, and various synthetic remedies. The second part of the book contains 15 pages of suggestions which are intended to assist the student of medicine in devising new formulæ; this matter is, however, of so elementary a character that it might with advantage have been omitted from what can scarcely be regarded as a student's text-book. The last 37 pages are devoted to summarised information as to the source, composition, uses, dose, and mode of administration of new medicaments, with additional notes where necessary. Thus the tannate of cannabine is described as having no action, whilst ethoxycaffeine, a nervous sedative, and thalline, an antipyretic, are both noted as dangerous. It has, unfortunately, been the custom of late to publish, in book form or otherwise, formulæ which have not been practically tried; as a consequence a certain hesitation is generally experienced in adopting a formula that does not bear the stamp of official approval. This formulary, however, has the advantage that it is the outcome of the practical experience of many of the foremost practitioners in Paris and on this account it is a useful addition to medical literature. At the same time the authors carefully point out that the formulary is in no sense to be considered as official.

Tommy Cornstalk. By J. H. M. ABBOTT, late Corporal, First Australian Horse. London: Longmans, Green, and Co. 1902. Pp. 264. Price 5*s.* net.—Mr. Abbott modestly calls his book "pages of chaotic scribbling." We can only reply to this that we wish that there were more such chaotic scribblers. Here is no fine writing, no heroics, but the simply told tale of a man who has been with his fellows of the empire face to face with death, of one who has shared in the toils, the miseries, and the joys of warfare. Much has been said and written about the failures and the successes of the Royal Army Medical Corps throughout the present campaign. Mr. Abbott devotes three chapters to "The Hospital" and they are all markedly worth reading, notably the portions dealing with the hospital orderlies. In other parts of the book will be found graphic little sketches of incidents of warfare. In a few lines the reader can see the whole scene before him; the lonely outpost, for instance, dirty and covered with vermin, weary almost to death with an equally weary horse, and yet, continues Mr. Abbott, "thank God that you are privileged to be here—yes, privileged—instead of reading about it in books and newspapers and not knowing." Well, some of us have had to stop at home, and such of us owe a debt to those who, like Mr. Abbott, not only go out to fight but give us their experiences in such a vivid manner as does Tommy Cornstalk.

Analytical Records

FROM

THE LANCET LABORATORY.

(1) "TABLOID" MERCURY IODIDE YELLOW; (2) SOLOID SODIUM HYDROXIDE AND SOLOID PYROGALLIC ACID; AND (3) "TABLOID" APOMORPHINE-COMPOUND.

(BURROUGHS, WELLCOME, AND CO., SNOW-HILL BUILDINGS, LONDON, E.C.)

1. THE tabloid of mercury iodide contains the true yellow mercurous iodide—that is to say, it is free from metallic mercury, the presence of which is responsible for the colour of ordinary green mercurous iodide. On account of the variation in the amount of the metallic mercury the therapeutic efficiency of the green mixture has proved uncertain. The use of the pure yellow mercurous iodide removes this uncertainty. Each "tabloid" contains one-eighth of a grain of pure yellow mercurous iodide which is stable if kept away from the light. 2. The soloid sodium hydroxide and the soloid pyrogallic acid are intended for use together in determining with readiness the degree of oxygenation of a sewage effluent. Of course, a sewage effluent must be regarded as satisfactory which contains an excess of oxygen. In such a case the soloid of sodium hydroxide and the soloid of pyrogallic acid when dissolved in the effluent will assume a rich red-brown colour. In the absence of dissolved oxygen no such colouration will result. Of course, the stopper must be air-tight and the bottle should contain no air-space. These soloids thus used in concert, form a very handy and useful means of diagnosing the state of a sewage effluent and of broadly determining the efficiency of the process. 3. Apomorphine combined with ammonium chloride and extract of liquorice has been used with marked benefit in cases of chronic bronchitis and other irritable states of the respiratory tract. The three constituents combine sedative, expectorant, and demulcent qualities. Each tabloid contains apomorphine hydrochloride one-fiftieth of a grain, ammonium chloride three grains, and extract of liquorice half a grain.

CASUMEN COCOA.

(ROWNTREE AND CO., LIMITED, YORK.)

We have already shown in these columns that Rowntree elect cocoa is of excellent quality and character. The same cocoa is blended with the soluble proteid of milk to form Casumen cocoa. According to our analysis the proteids amount to nearly 22 per cent. This proteid is of course a readily available food and its association with the stimulating constituents of cocoa is a decided dietetic advantage. As has been shown, simple cocoa possesses little actual nourishing value, although doubtless it is an aid to nutrition, so that in conjunction with proteid a powerful food is gained.

GRAIN GRANULES.

(THE LONDON NUT FOOD CO., 465, BATTERSEA-PARK-ROAD, LONDON, S.W.)

"Grain Granules" is a simple admixture of certain cereals so apportioned as to give a maximum amount of the nourishing constituents, proteids, phosphates, &c. Our analysis showed the presence of torrefied products of starch. The food readily yields soluble starch and dextrin to cold water. The amount of proteids was 12·78 per cent., while the mineral matter amounted to 1·21 per cent. and the moisture to 9·55 per cent. The Grain Granules preparation is relatively richer in nourishing constituents than is wheat flour, especially in regard to nitrogenous and phosphatic substances. It affords a good, though of course somewhat filling, breakfast dish.

CHINOSOL.

(THE CHINOSOL HYGIENIC CO., 36, ST. MARY-AT-HILL, LONDON, E.C.)

We have received various samples of chinosol suitable for ordinary disinfectant purposes. Chinosol presents undoubted advantages over many other antiseptics. It is a deodorant, it is soluble in water, it is non-corrosive, and relatively speaking it is non-poisonous. These advantages are, of course, not possessed by the common disinfectants, such as carbolic acid and its homologues, or by corrosive sublimate. Moreover, as Dr. E. Klein has shown, chinosol is one of the most powerful germicides. Its deodorising qualities are not its smallest recommendation. It is desirable that disgusting emanations should be destroyed as well as active organisms.

JAMS, PICKLES, AND SAUCE.

(THOMAS NASH, MARTIN-STREET, MILL-BAY, PLYMOUTH.)

We have examined these preparations for the impurities commonly occurring in their class but without result. We could find no evidence of metallic contamination or of the presence of objectionable substitutes.

ALLEN'S FOOTEASE (POWDER).

(J. W. OMSTED, 1, SOUTHAMPTON-ROW, HIGH HOLBORN, LONDON, W.C.)

Analysis discloses in this powder the very ordinary ingredients which occur in well-known formulæ of powders suitable for dusting the foot or the sock. The powder is well adapted for the purpose, since it is fine and impalpable, with a slippery, velvety feeling to the touch. It, moreover, contains an antiseptic. We have received a list of testimonials in favour of this powder and in one it is implied that "chronic inflammation of the spine which left me with paralysis" was relieved. This, of course, is arrant nonsense.

AIKMAN'S LENTIL FOOD.

(ANDREW AIKMAN, 19A, QUEENSFERRY-STREET, EDINBURGH.)

It is well known that lentil flour contains a high proportion of proteids, carbohydrates being correspondingly poor in amount, compared with that in cereal foods. The idea, therefore, of combining fine lentil flour with the rich cereal flours is dietetically sound. The microscope easily shows the composition of this food. It is rich in all classes of nutritives, not excluding those ministering to the mineral wants of the body.

GRIMMOND'S YORKSHIRE TOFFEE.

(GRIMMOND AND SON, 159, OXFORD-STREET, LONDON, W.)

Nowadays, it is high praise to say of anything that it is prepared with simple and honest ingredients. Obviously in the making of toffee the old formula could easily be departed from by using margarine for butter, beet sugar or glucose for cane sugar, and so on. This toffee gave no evidence of metallic impurity.

"ABSORBA" (BODY TOILET POWDER).

(ELLEN AND CO., 118, FENCHURCH-STREET, LONDON, E.C.)

The peculiar and characteristic odour of sweat is due probably to volatile organic acids. The composition of this powder has probably been suggested by this fact since, according to our analysis, it is little more than bicarbonate of soda with starch and a little scent. Its application is said to remove all odour of perspiration from linen, clothes, or the wardrobe. We could not find the presence of any antiseptic. We have no wish to detract from the merits of Absorba, but bicarbonate of soda at 2*s.* per tin of three ounces seems somewhat expensive, despite the addition of a little scent and starch.

THE LANCET.

LONDON: SATURDAY, APRIL 26, 1902.

The New Regulations for the Medical Service of the Royal Navy.

WE publish to-day the new regulations for the entry of candidates for commissions in the Medical Department of the Royal Navy. Apart from other considerations the re-organisation of the Army Medical Service, with the publication of a new Royal Warrant for that service, made it imperative on the Admiralty to draw up and to issue fresh regulations for the Medical Department of the Royal Navy. The document now published is dated March 26th last, and it is one not only of interest to the profession as a whole but, of course, of still more importance to those who are thinking of the Naval Medical Service as a career. By the latter the new regulations should be carefully studied—as they no doubt will be—and in order to see what changes have been introduced and what additional advantages have been conferred upon members of the Naval Medical Service they should be read and compared with the regulations previously in force as set forth in the last Student's Number of THE LANCET. Speaking generally we may say that such a comparison will show that a good many changes have been made and that a great deal has been done to increase the efficiency of the Naval Medical Service and to improve it generally; moreover, many new and additional inducements are held out to those who may be thinking of becoming candidates for admission into the service. It will, no doubt, be generally conceded that the framers of these new regulations have set about their work in an earnest and sincere spirit, that the objects aimed at are in the right direction, and that the changes and improvements introduced are of a necessary and wholesome kind.

To a great extent the regulations for the Royal Navy Medical Service are framed on the same lines as those laid down in the Royal Warrant for the Army Medical Service. The entrance examination becomes of a much more practical and clinical nature and better adapted to, and more befitting, candidates already qualified to practise their profession. The subjects are divided into compulsory and voluntary, and the voluntary subjects have been apparently selected with a view to secure men with some knowledge of foreign languages and aptitude for natural science. Provision is reserved for the Admiralty to appoint at its discretion a limited number of candidates from medical schools of the United Kingdom and the colonies without such competitive entrance examination. All these changes made with respect to entrance to the service should, in our opinion, ensure that those most fully educated and least crammed will be selected for the service, if a sufficient number of candidates put in their appearance and so lead to the principle of selection being adopted with any freedom. With the exception of a few specified appliances, all surgical instruments are, very rightly, to be provided at the public expense. We may refer here to the new and, as we regard it, very important regulation in regard to courses of instruction under which it will be seen that medical officers will have practical opportunities and facilities for keeping abreast with the progress of their profession and for studying special branches of it. Such courses of instruction are absolutely necessary in order to maintain professional efficiency, but naval medical officers have not hitherto enjoyed an opportunity for entering on them. We trust and believe that the practical advantages to the whole naval service which will follow upon this reform will become generally recognised. It will be observed that the medical officers of the navy are required to undergo the course of post-graduate study at their own expense although they are paid lodging allowance as are all other officers not provided with quarters on a ship. Is it too much to hope that the time will soon come when our naval medical officers, like the medical officers of the German navy, will receive full subsidies from Government? That time will be when the Admiralty recognises that a medical officer in the navy does not exist only "to doctor people," but that he has, or should have, functions of the highest importance to discharge in the prevention of disease. It is a case in point here that ex-house surgeons of large civil hospitals may be promoted to the rank of staff surgeon six months or a year earlier than their fellows. The principle is an excellent one, but why does the Admiralty desire only to secure proficiency in surgery in particular? The holder of a diploma in public health might well have the same privilege as an ex-house surgeon.

As regards pay and allowances, charge pay, the provision of cabins for naval medical officers, and other points, our readers will notice that material changes have been made, and in respect of some of these, as in rates of full-pay for example, the changes are unquestionably of a kind advantageous to the medical service. In the case of the deputy inspector-generals, however, the pay remains as it was. The question of half-pay service comes in where naval medical officers are concerned and such service does not count towards promotion. The allowances for charge pay form a good feature and have to be taken into account in calculating the sum total of attainable income. The application of the principle of promotion by selection instead of by seniority is more fully recognised and extended and more encouragement is held out in this direction for professional knowledge and merit. Our readers will gather from what we have said that, as a whole, our impressions regarding the new regulations for the Medical Department of the Royal Navy are distinctly favourable.

The End of the Birmingham Consultative Institution.

ON May 18th, 1899, at a meeting of the supporters of the Hospital Saturday Fund in Birmingham, a report was read in favour of a proposal by Mr. ARTHUR CHAMBERLAIN to establish what was termed "A Consultative Medical Institution." The scheme, as at first suggested, was that rooms

should be taken by the institution in a central position and that two consultant medical men—one a physician and the other a surgeon—should be appointed for a year, giving their services at an annual salary of £500 each. The promoters of the institution considered that other expenses, over and above the salaries of their consultant medical and surgical officers, would amount to about £500 per annum, so that they looked forward to an annual expenditure of £1500. For this sum they proposed to supply medical and surgical opinions at the reduced fee of half-a-guinea, thereby meeting the want of that class of the community who, on the one hand, cannot pay the usual medical or surgical consultant's fees, and who, on the other hand, are obviously not fit subjects for charitable treatment at a hospital. Mr. ARTHUR CHAMBERLAIN was stated to have anticipated that they would receive at the institution the fees for about 20 consultations daily, so that at the lowest estimate the receipts would be £3000 per annum, leaving a handsome balance of profit. The Executive Committee of the Hospital Saturday Fund in Birmingham having considered the scheme reported that the institution would be of incalculable benefit to the working-classes, and recommended that the Hospital Saturday Fund should take two-thirds of the responsibility attending the experiment, when Mr. ARTHUR CHAMBERLAIN guaranteed the remainder. Dr. R. SAUNDBY, who was present at the meeting of the constituents of the Hospital Saturday Fund, immediately entered a protest against the scheme, pointing out that the promoters, before committing themselves to it, should have taken the medical profession into consideration, inasmuch as, from a professional point of view, the proposal was vicious in every direction. The Hospital Saturday Fund, however, decided to make its experiment—the notion of exploiting the medical profession, and especially the younger and more needy members of it, apparently proving irresistible to the business minds of Mr. ARTHUR CHAMBERLAIN and his fellow supporters of the movement.

THE LANCET at once earned the indignation of those responsible for the creation of the Birmingham Consultative Institution by pointing out that the whole plan was a degradation of consulting practice. Consultation, of course, is a completely worthless thing unless it represents experience, reputation, and the confidence of the ordinary medical attendant. There could never be any case for creating such a nondescript innovation as a consulting institute in which the medical officers would have no position entitling their opinion to be of particular scientific or practical value. Such a scheme would harm the whole status of the medical profession by lowering the tone and standard of medical practice and would injure the working-classes at the same time by substituting for genuine experience in their medical advisers the untried talent of young men selected by laymen upon testimonials. These things we pointed out frequently and freely, but criticism was of no avail and the Birmingham Consultative Institution became a fact in the summer of 1900. The institution, according to its advertisement, had for its object "to lessen the strain upon hospital charity by providing on terms within and under conditions suitable to their pecuniary means and position medical and surgical aid to those who would otherwise seek it gratuitously or be unduly taxed by paying the usual consultation fees." Only one medical officer was provided. That such a scheme should have commended itself to so shrewd a city as Birmingham—a city which has made its mark in the world by its solution of economic difficulties and by its able management of its municipal affairs—is extraordinary. However, the people of Birmingham were unable to see that the scientific opinion of one gentleman upon all sorts of pathological conditions could not be as valuable, as informative, and as little open to error as the aggregate advice given by the staffs of general and special hospitals. The idea of getting for 10*s.* 6*d.* that for which they generally had to pay a guinea proved too strong for them. They did not see the enormous difference between the guinea advice and the half-guinea advice—between the real article and the not too specious imitation. And another thing which they failed to grasp was that the reduced fee of half-a-guinea would actually be accepted by the genuine consultant physicians and surgeons of Birmingham if the circumstances of the patient warranted the reduction. For all the consultant physicians and surgeons of Birmingham, save one or two whose abstention had an obvious and excellent motive, promised to see in consultation for 10*s.* 6*d.* any case that was brought to their notice by a general practitioner as a fit case. That is to say, if the patient's self-respect and annual income properly precluded him from seeking gratuitous advice at a hospital, while the ordinary consultation fee of a guinea or two guineas was burdensome, he could pay for the best advice that Birmingham could produce the same fee as he would have to pay at the Birmingham Consultative Institution. Mr. ARTHUR CHAMBERLAIN and his followers were, however, infatuated with their scheme, and they appointed Dr. HENRY WARD IRVINE consulting physician to the institution. But unfortunately for Dr. IRVINE they also exhibited in the various manufactories and trade establishments of the town advertisements referring to that gentleman's special ability as a general consulting practitioner and soliciting and inviting the public to consult him at a reduced fee. Accordingly, at the winter session of 1900, Dr. IRVINE was summoned before the General Medical Council to defend himself on a charge of unprofessional conduct in that he had approved of, and acquiesced in, the publicity thrust upon him. Mr. ARTHUR CHAMBERLAIN appeared before the General Medical Council in defence of Dr. IRVINE and spoke of the institution as supplying a kind of advice to the public superior to that which they would obtain from the "street doctor," evidently meaning by this phrase to belittle the attainments of the Birmingham general practitioners. The General Medical Council came to the inevitable conclusion that the charge against Dr. IRVINE had been proved but postponed adjudication until the next session so that he might consider his position. He considered it to such good effect that he accepted an appointment under the Education Department to be one of His Majesty's Inspectors of Schools and consequently made no further appearance before the Council.

News comes to hand this week that the Birmingham Consultative Institution has come to an end, from which we gather that no other member of the medical profession cared to run counter to all proper professional views by becoming

the employé of the institution. The last report of the Birmingham Hospital Saturday Fund, in admitting the failure of the scheme, states that "the claims of the more thrifty and self-respecting members of the community to obtain consulting advice at a fee of half-a-guinea rather than be forced to obtain it at the hospitals for nothing have been set at nought." This, of course, is a misleading way of speaking. What has happened is that the said thrifty and self-respecting persons will now obtain from men of real experience and learning the advice which the Birmingham Consultative Institution never could have given them by a system of consultant medical officers possessing no opportunities of gaining clinical experience. We are glad that the Birmingham Hospital Saturday Fund has taken the sensible step of ceasing to attempt to oppose the main principles of medical practice. The attempt to exploit the medical profession was an unworthy one. The belief that a young man, attracted by a salary and adorned with the label of "consultant," became capable of giving superior medical advice was ridiculous. Moreover, the statement that the institution was required to meet the wants of a particular class, neither rich enough to consult the usual physicians or surgeons nor poor enough to seek the hospital, was untrue. No such want existed, for the medical profession in Birmingham had with practical unanimity offered to meet it. How they are now meeting it will be seen at once by perusal of the correspondence forwarded to us this week by Dr. SAUNDBY (see p. 1209), whose vigour and energy throughout the struggle have been worthy of all commendation. He had a good cause to champion and an obvious abuse to eradicate. He has succeeded all along the line and we have been glad to help him.

Cancer Research.

IN a leading article last week we commented upon the scheme put forward by the Royal College of Physicians of London and the Royal College of Surgeons of England for the organised investigation of cancer. For the working of this scheme a capital sum of £100,000 is judged to be necessary and on the same day that our article was published there appeared in the daily press an influentially signed appeal to the public to subscribe this money. Already one-fifth of the amount has been paid or promised and it is sincerely to be hoped that the remainder will be forthcoming quickly. In our remarks upon the scheme, which was published in full in THE LANCET of April 19th, p. 1131, we touched upon the apparent superfluity of the general committee, and one at least of our lay contemporaries was struck equally with what appeared to be an unnecessary clumsiness in the working machinery of the scheme. An explanation of the constitution of this body has been given to us since. It had originally been hoped that all the money would have been supplied by one individual or at all events by a few contributors. That hope was disappointed and so, the general public being appealed to, it was thought wiser to include in the arrangement of the scheme a controlling body so constituted as to represent the wide area from which it is hoped that the funds will be drawn. In fact, the most influential patrons of the scheme signified their view that a general committee formed on such a basis was necessary if their support was to be retained.

The general character of the scheme is certainly comprehensive. According to its terms any worker whose efforts are, however indirectly, tending towards the elucidation of problems bearing upon the nature of cancer may fairly consider himself a just claimant for support. It is here that our main concern lies for the best possible utilisation of the fund. Not only the right paths of work must be trodden: they must be trodden by the right men. Whether the mystery which obscures the nature of malignant disease is in the near future dispelled or not, a great work will be done for the cause of true scientific progress in England if the raising of this fund starts a class of trained scientific medical workers methodically, collectively, and uninterruptedly pursuing investigations with time and thought unfettered by other ties. The English medical schools no less than their continental analogues breed keen and capable investigators. The majority, however, in this country find science a glorious mistress but a poor paymaster. Unless he is exceptionally fortunate the young man of science who has had medical training is obliged, whatever may be his natural talents or inclinations, to desert the narrow paths of research for the at least more productive field of practice. In plain words, he cannot afford to remain a purely scientific observer and investigator; only if of exceptional energy or particularly favoured by circumstances can he continue scientific investigations at all, while his main efforts are perforce directed towards gaining a livelihood from the practice of his profession in one or another of its branches. If the scheme for the organised investigation of cancer removes these disabilities from the class of man to whom we have referred the medical profession and the country at large will owe it a heavy debt of gratitude. It was our fear lest the constitution of the general committee should hamper rather than encourage the genuine worker that led us to criticise its formation. In view of what we have heard since it is sufficient to express a hope that the great difficulty of the proper selection of investigators will be surmounted. It is here that we trust that the executive committee will not too narrowly limit its awards to those only who seem to be working directly at the subject of cancer. Utterly unknown as is the cause, and largely speculative as are all the theories as to the nature, of malignant growths, an infinite variety of special lines of investigation may rightly be claimed as leading truly towards the desired goal. It may prove true that the wisest way of attacking the question of complicated malignant tumours is to study the simplest forms of growth first and not to endeavour at once to unravel the secret of cancer. When the growth of simpler tumours, the occurrence of hypertrophies of various tissues, the proliferation of embryonic cells, the very development of the ovum itself—when these phenomena and allied manifestations in the vegetable world are understood and explained to the minutest chemical and biological detail—perhaps then for the first time shall we be in a position hopefully to assail the fortress which at present hides the secret of malignant growth securely from all our efforts.

In one particular, at least, such a scheme as that put

forward by the Royal Colleges is certain to produce beneficial results. It will surely result in a saving of labour by the increased inter-communication among men working at the same or allied subjects. Isolation in scientific work almost inevitably means that much unnecessary work is done over ground that has already been thoroughly tilled by another whose labour has not come to light. The collecting of statistics and other classifying work that will be done under the scheme should prove a great boon in providing individual workers with a wide view of what has already been thoroughly accomplished. The general standard of knowledge, too, concerning all subjects bearing upon cancer should be raised both in the ranks of the medical profession and among the general public. Good results these, whether or not they include "the consummation devoutly to be wished for," and we hope that it will not be long before the rich and generous provide, if not the entire £100,000, at any rate such a proportion of it as will enable many a true student to devote himself to scientific work the doors of which are at present closed to him for lack of the golden key.

Annotations.

"Ne quid nimis."

REVISED CLASSIFICATION OF CAUSES OF DEATH IN THE NATIONAL RECORDS.

WE are indebted to the Registrar-General for a copy of the new official list of causes of death which was adopted at Somerset House at the beginning of the present century for the abstraction of deaths in England and Wales in place of the previous list which, in all essentials, had been in use at the General Register Office ever since its foundation in 1837. The new list is based on the nomenclature of diseases authorised by the Royal College of Physicians of London and contains several important changes. In the first place, the old classification of diseases has been considerably modified. Thus the time-honoured titles "zymotic," "miasmatic," "constitutional," "developmental," and "dietetic," have been discarded and the important series of diseases hitherto classed under one or other of these names has been placed together under the comprehensive heading "General Diseases" (*Morbi corporis universi*). In the grouping of these general diseases several improvements will be found. Thus the important class of malignant diseases has now been subdivided into (1) carcinoma, or true cancer, and (2) sarcoma, whilst a third line has been added to receive such cases of malignant disease as cannot be safely allotted to either of these headings. The tuberculous group of diseases has also been subdivided and the endeavour has been made to encourage more careful differentiation of the chief forms of this malady. By the introduction of italic type it has been attempted to discourage the use in medical certificates of such indefinite and objectionable terms as "tabes mesenterica," "diarrhœa," "gastro-enteritis," and "puerperal fever," and the authorised equivalents for these diseases are added in ordinary type. Inasmuch as the deaths have hitherto been classified on the same principle in each of the three divisions of the United Kingdom, with manifest convenience to students of vital statistics, we may express the hope that this new list will be adopted by the Registrars-General of Ireland and Scotland, so that a similar uniformity may still be maintained in a class of statistics which are rapidly becoming of great national importance. We much regret that other urgent demands on our space preclude our publishing the new official list in our present issue, but we hope to insert a complete copy in THE LANCET of next week, together with a set of appropriate suggestions for its use, which we are confident will be utilised by our readers in filling up their certificates of cause of death.

THE CORONATION AND THE POOR.

THE Local Government Board has issued a circular to the Poor-law authorities of England and Wales, and also a circular to county councils, councils of boroughs and urban districts (whose accounts are subjected to audit), rural district councils, and parish councils. These circulars direct that such Poor-law authorities or councils may make various modifications in the diet and discipline of the poor persons in workhouses, or that any reasonable expenses may be incurred by the councils in connexion with the public celebration of the Coronation. The councils, however, must be cautious—at least, we take that to be the meaning of the following somewhat cryptic sentences: "The effect of the sanction will not be to legalise any expenses in this matter. It will only prevent the disallowance of such expenses, if reasonable, by the district auditor at the audit." However, it is quite plain that the Local Government Board intends that the poor and needy shall have not merely a sentimental interest in the Coronation. It is of but little use to tell a hungry man to rejoice; let us hope that on the two great days of the Coronation and the day after it mirth and good cheer will abound from one end of the kingdom to the other.

THE PECULIAR PEOPLE AGAIN.

ONCE more the death of a child has been brought home to parents belonging to the sect known as the Peculiar People and light sentences of a few months' imprisonment have again marked the difficulty of dealing with these unhappy fanatics. We have written of them in these columns until we almost owe our readers an apology for again referring to the subject. Everyone knows that the Peculiar People take literally an isolated passage in the Bible and neglect all those which refer to the beneficence of medicine and the necessity for the exercise of the physician's skill, with the result that when one of their sect falls ill an elder is called in who anoints with oil and prays, while the patient dies or lives as nature may direct. When this happens in the case of an adult nothing can be said, or at any rate nothing can be done; but certain Acts of Parliament have cast the obligation of providing medical attendance for children upon parents and others entrusted with the care of them, and the neglect of this obligation, if it causes the death of the child, is good ground for a conviction for manslaughter. In a few instances parents have thus been convicted; more frequently, however, they are acquitted of manslaughter, in which case it is still possible to convict them under the Cruelty to Children Act, 1894, of neglecting the child in such a way as to cause unnecessary suffering. The reason why a conviction for the more serious offence does not often take place is to be found in the natural difficulty of proving that if medical aid had been summoned the patient would have lived. It is not enough to prove that he might have lived, there must be positive evidence that the death was caused or accelerated by the neglect. In some cases it is within the power of a medical man to give such evidence and it is his duty to do so unflinchingly, but it is clear that in others his opinion, whatever it may be, can hardly rest upon a sufficiently firm basis of fact and observation for him to enunciate it with confidence and in such cases there is no

duty cast upon him to express himself with a certainty that he does not feel. When conviction follows a prosecution of the kind referred to, whether it be for manslaughter or for the lighter offence, trifling penalties only are, as a rule, imposed. In the case immediately under consideration, that of a couple named Clark, tried at the recent sessions at the Old Bailey, Mr. Justice Grantham sentenced the man to four months' and the woman to two months' imprisonment in the second division. Such a penalty cannot be expected to act as a deterrent, but it is doubtful whether a heavier one would not merely exalt those receiving it into the position of martyrs and possibly win adherents to their faith by the publicity that would inevitably ensue. There would possibly be some hope of the gradual conversion of the Peculiar People to reasonable views were it not that in the newspapers read by the humbler classes from which the Peculiar People are recruited there is a general tendency to belittle and to ridicule the work of the medical man, while the advertisements of the quack medicine vendor fill whole columns with promises of cheap and speedy restoration to health for those who avoid the qualified practitioner and buy the vaunted pill or potion. Those who are brought into contact with the Peculiar People may be able to some extent to urge upon them in time of health the consideration of a question which in time of illness they have no leisure to discuss, and to persuade them not to carry their religion to the point of breaking the law of the land they live in, but we have little hope that argument will effect much. The person who has convinced himself as the Peculiar People have done, if once satisfied that he is right, is not likely to allow his children to wait until they can choose for themselves, and the law can do but little to save the children's lives because punishment as a deterrent seems to be out of the question and the law, as a rule, is only set in motion when death has ensued and the absence of a certificate has caused a coroner to hold an inquiry.

MEDICAL MEN AS WITNESSES.

AN action which was recently brought with success at the New Mills County-court by a medical man deserves a few words of comment from us. The plaintiff, Dr. George Lorimer of Buxton, went to London some time in 1898 upon a summons in order to give evidence in the High Court of Justice as to the capacity of a former patient to make a will, the deceased having been attended by him with regard to her mental condition. Dr. Lorimer charged five guineas for preparing his case and five guineas a day while in London, exclusive of railway fares and expenses. His account for £25 12*s.* was not, however, settled and after repeated efforts to obtain payment he sued to recover that amount. Evidence was given as to the scale of charges laid down by the Manchester Medico-Ethical Association, showing that Dr. Lorimer's account was in accordance with professional custom. For the defence it was contended that Dr. Lorimer was not entitled to charge as an expert witness, because his evidence related to the question of fact whether he did or did not believe the testatrix to have been in her right mind. We are not surprised to find that this novel contention did not commend itself to his Honour Judge Smyly who gave judgment for the amount claimed with costs. A medical man is called in to see a patient because he is an expert in the treatment of disease and for no other reason. If his attendance leads to his being subpœnaed as a witness to depose to matters coming within the scope of his observation as a medical man it would be contrary to common sense to say that his evidence was other than that of an expert. Apart from his being an expert he would never have been called as a witness at all. That a medical man can be taken from his practice for several days without compensation in order to assist a litigant is a very grave hardship, and that those in charge of the conduct of cases where medical evidence is required should often try to obtain such evidence at the medical man's expense is not a little scandalous. We are always glad to chronicle the defeat of such manœuvres. The compensation claimed by Dr. Lorimer was certainly not excessive in the circumstances; moreover, the estate of the testatrix could well afford to pay it. Where a party in a lawsuit requires medical evidence it should be possible for the medical man to arrange with the solicitor who is entrusted with the case sufficiently clear terms to avoid the inconvenience and the annoyance of a subsequent dispute as to remuneration. To give medical evidence is a disagreeable necessity incidental to our profession and every attempt should be made to insure the proper payment of medical witnesses. We trust that the public have noted Judge Smyly's words in giving judgment for Dr. Lorimer for the amount claimed with costs. He said that the time given to the case by Dr. Lorimer, who had been called as an expert witness, was worth more than the fee charged. As a rule there is no sort of relation between the value of the work and the scale of the remuneration of medical witnesses.

PLACENTA PRÆVIA.

THE treatment of placenta prævia must always be a subject of much interest to those engaged in obstetric practice. The performance of internal or bipolar version is still the most successful and the simplest method of treating this complication. That cases of central placenta prævia which do not require any treatment at all do occur, however, is shown by the case recorded by Mr. A. W. Lemarchand in the current number of THE LANCET. At the present day when the obstetrician is usually also a gynæcologist it is not surprising to find that abdominal section has been proposed as a method of treating placenta prævia. There is no doubt a great fascination about the ease and rapidity with which a Cæsarean section can be performed under suitable surroundings and the death-rate of such an operation should be very small indeed. It does not require any prophetic vision to see that the scope of this operation will become larger and larger in the future and that it will to a considerable extent replace the operation of the induction of premature labour, at any rate in those cases of pelvic contraction in which the question of obtaining a living child with certainty is a matter of some doubt. When we contrast the difficulty of a bipolar or internal version performed through the vagina with the ease and security of a Cæsarean section it is little wonder that men often better trained in gynæcology than in obstetric medicine should prefer the latter operation to the former. Unless, however, the operation of Cæsarean section is to be performed upon all cases of placenta prævia, a suggestion which even its most staunch supporters would hardly put forward, it must be reserved for those cases in which the hæmorrhage is severe—that is to say, precisely the cases that are most likely to give bad results and that are least able to stand the shock of an abdominal section. The present methods of treating placenta prævia—viz., by rupture of the membranes, bipolar or internal version, or the introduction of Champetier de Ribes's bag after rupture of the membranes, are undoubtedly attended with a high fœtal mortality, but the maternal death-rate of cases so treated should not, and does not, exceed 5 per cent. It may be that we do not in this country consider the life of the child as much as we ought to, but no method of treatment can be considered justifiable which increases the risk to the life of the mother for the sake of a child, the

chances of whose survival must always be problematical. The case recorded by Mr. Lemarchand is probably an example of a reflexal placenta prævia—that is, a placenta prævia due to the development of the chorionic villi in connexion with a portion of the decidua reflexa as well as with the decidua serotina. The investigations of Hofmeier and others have shown that this is the commonest variety of placenta prævia, but the old view that it is at times due to a low implantation of the ovum cannot be entirely given up, and the interesting specimen recently recorded by Dr. J. Clarence Webster in the *British Journal of Obstetrics and Gynæcology*, No. 3, 1902, p. 273, shows that such a condition does at times occur. The increase in our knowledge with regard to the decidua reflexa proves that the majority of cases of placenta prævia which produce abortion or premature labour are examples of the reflexal variety and that the hæmorrhage which occurs is due to the want of union or the feeble union between the decidua reflexa and the decidua vera. Cases of central placenta prævia are probably due to the development of chorionic villi in connexion with the whole of the decidua reflexa, and the clinical fact that such cases can occur with comparatively little hæmorrhage is to be explained by the occurrence of degenerative changes in the decidua reflexa and the imperfect union existing between it and the decidua vera. Further evidence in favour of the view that the placenta in Mr. Lemarchand's case was in large part developed in connexion with the decidua reflexa is afforded by his description of it as being thin and spread out over a large area. It is especially in cases of placenta prævia of reflexal origin that such anomalies are likely to be present.

THE ERADICATION OF MALARIA.

"THE man who will make West Africa pay," said Miss Mary Kingsley, a few years ago, "will be the scientific man who gives us something more powerful against malaria than quinine," and, as Major R. Ross, in an interesting letter[1] to Sir Alfred L. Jones, Chairman of the Liverpool School of Tropical Medicine, points out, that something has been found. The letter is really Major Ross's report after inspecting the anti-malaria operations of the Liverpool School of Tropical Medicine in charge of Dr. M. Logan Taylor. An army of about 70 men, he states, has drained nearly the whole of the most pestilential parts of Freetown. In cases where draining could not easily be carried out the pools of water were treated with crude petroleum in order to keep them free from mosquito larvæ. Another gang of men were employed in removing old tins, bottles, and similar rubbish from the houses. Some 2257 cartloads of such rubbish have been cleared away. It is astonishing to hear that most of this rubbish has been accumulating for years and it is easy to conceive what swarms of mosquitoes must have bred in 2000 odd cartloads of old tins. Major Ross says:—

> It will now be asked, what effect have these measures had, after eight months' trial, on the number of mosquitoes in Freetown? In my opinion we have absolutely demonstrated the possibility of getting rid of mosquitoes at a small cost in Freetown and therefore probably in any town. This result is entirely in accordance with the experience of some of those who have made the closest study of mosquitoes; for instance, of Dr. L. O. Howard, of the United States Department of Agriculture, who has frequently operated against the insects; and of Major Gorgas, health officer of Havana, who reports that he has reduced the mosquitoes by 90 per cent. in that town.

Labour costs only about £1 a head per month. To this must be added the salary of Dr. Taylor as superintendent, but in normal circumstances the health officer and engineer should superintend the work. After the drainage system is complete the number of men employed in the campaign against mosquitoes can of course be reduced. In the health of Freetown since these operations Major Ross states that there has been a great improvement. On his first visit two years ago he says that he never saw a more gloomy place, and an officer assured him that the inhabitants felt "as if a sword were hanging over their heads." All this is changed now and the Europeans look as cheerful as they look in India. Garden parties and other entertainments follow each other in quick succession, and there are a number of English ladies in the town. It is significant that at a ball given at the Botanical Gardens where 80 Europeans were present, including 20 ladies, the dancing was kept up till 2 A.M. in spite of the so-called malarial vapours of the night, yet no one died.

[1] Published in the Liverpool Courier, April 16th, 1902.

THE ADVENTURES OF A MUMMY.

READERS of Max Adeler's work will remember a story about a coroner anxious for fees who insisted upon holding an inquest upon some mummies. What was formerly a pleasant fiction has now become in all essential details, except the anxiety for fees, a fact, and these details were recently given to the world in the very unromantic atmosphere of the Court of Appeal. Last year a Mrs. Aitken brought an action against the London and North-Western Railway Company to recover damages for negligence in the carriage of a case containing a mummy which she had consigned in 1899 to the company's care. The jury awarded Mrs. Aitken £75 damages and the action heard on April 17th of this year was an appeal against the verdict. Mrs. Aitken had obtained the mummy in Peru and had consigned it to her son, who was at school in Belgium, to be presented to the school museum. The mummy, packed in a box, duly arrived at Liverpool and was handed over to the defendant company which gave a receipt for it and sent it to London where, however, it arrived without the consignment note. The box was accordingly detained and finally opened. An unpleasant smell was noticed, the body was seen, the police were communicated with, and, in turn, the coroner. An inquest was held and the following verdict was returned:—

> That the woman was found dead at the railway goods-station, Sun-street, on April 15th, and did die on some date unknown in some foreign country, probably South America, from some cause unknown. No proofs of a violent death are found, and the body has been dried and buried in some foreign manner, probably sun-dried and cave-buried, and the jurors are satisfied that this body does not show any recent crime in this country, and that the deceased was unknown and about 25 years of age.

The owner then came forward and was allowed to send the mummy on its way to Belgium. It arrived at the museum safely, but alas! the law stepped in and Mrs. Aitken received the following pathetic letter:—

> Melle, May 23rd, 1899.
>
> DEAR MRS. AITKEN,—You will be shocked to hear the lamentable end to which has come the poor mummy that gave you so much trouble. It arrived here on Saturday last. On Sunday we had the visit of the chief of the local police, accompanied by a doctor and another person, for the purpose of inspecting that mummy that the papers have spoken so much about. On the same day I received a written order from the police to have it buried in the public cemetery without delay. It is supposed that the moist air of the sea and of the climate of England has caused the beginning of a decomposition in the fleshy parts. Whatever may be the truth, the fact is that the poor mummy rests now in the cemetery at Melle. I am exceedingly sorry to think that all your kindness and trouble has come to this, but I feel inexpressible pleasure at the remembrance of your generosity and kindness. I shall never think on the mummy without thinking with affection and gratitude on you as the best lady I have met with in my life. I should feel happy, dear Mrs. Aitken, if you would accept my heartfelt gratitude for what you have done for us, and always believe me, Yours very truly, F. ERNEST.
>
> I hope that the company has not given you any more trouble, considering that I have paid the transport from Liverpool to Melle.

Finally, as regards the damages, the Court of Appeal held that the defendant company was liable and therefore its appeal was disallowed. The so-called mummy was not, of course, a mummy in the strict sense of the term. That is to say, the body had not been subjected to any preservative process, but had been simply sun- and air-dried, in the same manner as biltong or jerked beef. When exposed to the damp air of the ocean and of England decomposition naturally set in. It is a pity, we think, that the Belgian police authorities did not have the mummy placed in the ingenious apparatus

invented by the Messieurs de Rechter of Brussels, for preserving bodies by means of formic aldehyde. Possibly, however, the apparatus in question was not complete in 1899. We described the process in THE LANCET of Nov. 9th, 1901. p. 1279, and in such a case as this it would have answered well so that the school museum might still be in possession of its mummy.

"MR. PUNCH" AND THE SICK CHILDREN.

ON Monday, May 5th, an exhibition of black-and-white drawings by members of "Mr. Punch's" staff will be opened at the Woodbury Gallery, 37, New Bond-street, W. The following well-known artists will be represented: Messrs. Linley Sambourne, Bernard Partridge, E. T. Reed (maker of "Prehistoric Peeps"), Phil May, L. Raven Hill, C. E. Brock, A. C. Corbould, G. H. Jalland, G. D. Armour, A. Hopkins, E. Hopkins, Ralph Cleaver, and G. R. Halkett. Black-and-white work from such humorous masters of it must always have qualities to recommend it to our attention but this exhibition has a particular interest for the medical profession. The whole of the proceeds derived from the fees for admission, by the kind consent of the proprietors of the gallery, is to be devoted to the funds of the Hospital for Sick Children, Great Ormond-street, Bloomsbury, W.C. It may be within the recollection of our readers that the Hospital for Sick Children, the funds of which will be benefited by the receipts from this exhibition, is the charity to which "Mr. Punch" handed over more than £16,000 in subscriptions and donations obtained through the efforts of our entertaining contemporary about two years ago. We hope that this new effort on behalf of a most deserving charity will meet with proportionate success.

LEUCOCYTOSIS AS A POINT OF PROGNOSIS IN APPENDICITIS.

THE systematic examination of the blood in certain diseases has proved of great value both as regards diagnosis and prognosis. This remark, however, applies more to those conditions which come under the care of the physician than to those which require surgical intervention. In the *Medical News* (New York) of April 5th last is a paper by Dr. H. M. Joy and Dr. F. T. Wright of Calumet giving the results of investigations which they have made as to the prognostic value of leucocytosis in cases of appendicitis. They maintain that the leucocyte-count is a valuable additional indication as to when an operation should be resorted to. After a study of a large number of cases they suggest the following procedure. If the signs, symptoms, and history tend to establish a diagnosis of appendicitis, a leucocyte-count is at once made. If the number of leucocytes is high, say about 16,000 per cubic millimetre and the symptoms of the case considered by themselves would be called severe, an immediate operation should be strongly recommended. The case is a serious one which may at any time pass beyond the possibility of successful operative relief. If the count proves the number of leucocytes to be between 13,000 and 16,000 and the symptoms are moderately severe an operation is in all probability desirable, but if any strenuous objection be offered or other circumstances be unfavourable for operating the case may be watched for a short time before a definite decision is arrived at. A second blood-count should be made in from four to eight hours; if the leucocytes have increased, say, by 1000 or more then the case may be assumed to be becoming more serious and an immediate operation should be decided on. If the first count be less than 16,000 (supposing the case has been seen from the commencement of the illness) and subsequent examinations of the blood show no increase, then Dr. Joy and Dr. Wright consider that the case will be a mild one in which the prognosis without operation is good for that particular attack. The above observations are of interest, but whether the practical value will prove to be great is a matter for further trial. We doubt whether the blood count would be considered of more value by the physician and surgeon than the indications upon which they have been accustomed to rely. Cases, however, are not uncommon in which it is difficult to decide as to whether an operation should be recommended or not and in such circumstances the extent of the leucocytosis may prove an additional guide to the course which should be adopted

THE PROPOSED AMBULANCE SERVICE OF THE METROPOLITAN ASYLUMS BOARD.

AT a meeting of the Metropolitan Asylums Board on April 19th a letter was read from the Society of Medical Officers of Health asking the Board to receive or to instruct the Ambulance Committee or some other committee to receive a deputation from the society in reference to the danger both to the patients and to the public likely to be occasioned by the proposed road ambulance service between London and Dartford for the transport of small-pox patients. It was proposed that the deputation should be received by the Board, but after some discussion this motion was lost, and an amendment to the effect that the General Purposes Committee should receive the deputation was carried.

THE ALLEGED PREVALENCE OF PHTHISIS AMONG POST-OFFICE EMPLOYÉS.

A CORRESPONDENT has written to us with reference to the statements made by Dr. F. T. Roberts in the Lumleian Lectures concerning the mortality from phthisis amongst post-office employés. He points out that it has been demonstrated in Parliament and elsewhere that there is no excessive prevalence of tubercle among this class of Government servants. He states also that between the ages of 15 and 65, ages which cover the period of service of the post-office employés, the mortality among them is below that of the general population. We are also informed that throughout the country the workers in the post-offices excel in athletics. Dr. Roberts's lectures were so packed with useful information carefully arranged that criticism upon one small point does not detract from their value; we have already alluded to our belief that for his statements on the matter of phthisis among post-office employés he would require to find some support. On the other hand, we do not forget that Dr. Roberts's experience of phthisis during many years at the Brompton Hospital for Consumption gives him a right to speak with the greatest authority. We should be interested to know if the statistics of that institution tally with the views that he has expressed.

HOSPITAL SATURDAY FUND.

THE Hospital Saturday Fund, which has been doing excellent work on behalf of the sick poor for the past 28 years, has just issued its annual report. We are pleased to note that the total income for the year 1901 is £21,547—an increase of £1266 over the year 1900 and £1409 more than the total for 1897, when the last annual street collection was made. It is gratifying to everyone concerned to know that the abolition of this objectionable mode of collecting money for hospital charities has not been attended with any loss to the finances of the Fund. The sum distributed in 1901 was £19,244, an increase of £1546 on the amount awarded in 1900, and £1134 more than the sum awarded in any former year. The grants were apportioned as follows: 38 general and cottage hospitals received £7194; 63 special hospitals,

£5774; 32 dispensaries, £962; 24 convalescent homes, £1801; and 25 miscellaneous institutions, £3513. The total sum received through local committees in 1901 was £1808, as compared with £1584 in 1900. Last year the Council commended five committees for having collected more than £100 each; this year seven are commended—namely, Enfield, Southwark, Camberwell, Woolwich, St. Marylebone, Walthamstow, and Poplar. We note with satisfaction that the expenses of management during the year 1901 bear a lower proportion to the amount collected than they have done in any previous year.

THE REVOLVER.

THE assassination of the Russian Minister of the Interior by a discontented student armed with a revolver serves to remind us once more that while cheap revolvers are a source of danger to the public they are so still more to persons marked out by their political and social position as conspicuous targets for murderous fanatics. We have refrained from calling attention to several cases of murder and suicide with pistols that have occurred recently in our own country for fear of wearying our readers with the subject. Such incidents, however, continue to show how common the revolver is and how easily it may be obtained, while the death of M. Sipiaguine causes us to recall the deaths of King Humbert of Italy and of the late President of the United States and the attempt to murder King Edward VII., perpetrated abroad not long before his accession to the throne. There is no reason why the possession of a revolver by an unlicensed person should not be in itself a fact to be accounted for, subject to the infliction of a severe fine in cases in which no satisfactory account is forthcoming. A revolver is not difficult to conceal from strangers, but persons upon intimate terms with the possessor may at any time become aware of its existence, and if half of a substantial penalty were known to be the reward of the informer the police would not be likely to lack information which would be of considerable assistance to them.

THE ADMINISTRATION OF OPIUM IN PNEUMONIA.

THE use of preparations of opium or morphine in cases of pneumonia has always been one which has given rise to many expressions of opinion. Some authorities, whilst recommending a hypodermic injection of morphia (grain ⅛ to ¼) for the relief of the pain, restrict its employment to the early stages of the disease and consider that the drug should not be employed in the later stages, especially if the lungs are extensively involved. This method of procedure is, we believe, adopted by the majority of physicians, but others are of opinion that opium in any form is a drug of extreme danger in pneumonia. Sir W. T. Gairdner, in a letter to the *Glasgow Medical Journal* for April, makes some interesting remarks on this subject. He maintains that in withholding opium in cases of pneumonia he is not advocating any theory but is dealing with facts which he knows to be true. In pneumonia, far more than in pleurisy, more even than in bronchitis, the safety of the patient depends upon the respiratory nerve-centres being kept, as it were, "wide awake." He points out that the greatly accelerated breathing is practically at once the index of the danger and the means by which nature compensates for the restricted area of lung within which the air can meet the circulating blood. If, then, when the respirations are 60, or even 50 or less in a minute, the respiratory nerve-centres are sent to sleep by a potent narcotic it is obvious that the influence exerted at a critical time must be unfavourable. Opium is, of all narcotics, the one that tells most rapidly on the respiratory nerve-centres and thereby not only on the reflexes dominating the lowest respiratory acts but on all the more latent reflexes which are concerned in what Sir W. T. Gairdner terms the "scavenger action" of the bronchial tubes. In the case of a patient suffering from pneumonia all this essential machinery, working at high pressure to keep the patient alive, is brought to a comparative standstill if opium is given while the disease is still proceeding, or at least not retreating. The result, therefore, of administering this drug in such circumstances must be bad. Sir W. T. Gairdner modestly remarks that he gives this theory tentatively, not dogmatically, although he is absolutely sure of the facts. We certainly feel inclined to support him in his contentions.

THE AFTER-CARE ASSOCIATION.

As our readers know, the object of this association is to assist poor persons who are discharged as recovered from asylums for the insane; it is the only charity of the kind in the United Kingdom and cases are assisted from all parts of the country. It is not surprising, therefore, that the association should be in much need of financial assistance. As evidence of the progress of its work the report of the association for the year 1901 which has just been issued will be perused with satisfaction. An important part of the work of the association is the supplying of country homes, of clothing, and of money to the discharged patients, but an equally important part of the work is the extreme amount of care and attention that is given to the character and circumstances of those with whom the cases are placed and the finding of occupations to suit persons who have often many peculiarities and prejudices. During the past 12 months there were 214 cases before the council; in 1900 there were 195. The number who were successfully helped was also greater in this than in any previous year; of these 139 were women and 75 were men. The total amount of subscriptions and donations for maintenance in 1901 amounted to £569 7*s.* 2*d.*; in 1899 they were £549 8*s.* 11*d.*; and in 1900, £540 13*s.* 11*d.* The address of the secretary is Church House, Dean's-yard, Westminster, S.W.

THE CONDITIONS OF HEALTH IN SCHOOLS.

As we briefly announced last week, a special committee has been appointed by the British Association for the Advancement of Science to consider the conditions of health essential to carrying on the work of instruction in schools. The committee consists of: Professor C. S. Sherrington (chairman), Mr. E. W. Braybrook, C.B., Dr. C. Childs, Dr. Clement Dukes, Miss Findlay, Dr. C. W. Kimmins, Miss A. Ravenhill, Mr. J. Russell, B.A., Professor L. C. Miall, Mr. Sydney Stephenson, Dr. C. E. Shelly, Professor H. L. Withers, and Dr. W. H. R. Rivers. Mr. E. White Wallis is acting as secretary. In the first instance the committee is collecting information upon the following matters:—

A collection and tabulation of records of original observations on the periods of day appropriate for different studies, the length of lessons, and the period of study suitable for children of different ages.

A collection and tabulation of anthropometrical and physiological observations forms in use in various schools with a view to preparing a typical form for general use.

A collection and tabulation of anthropometrical and physiological observations recorded in different schools for a series of years on the same children.

A collection and tabulation of recorded investigations into the causes of defective eyesight in school children and a definition of the conditions necessary for preserving the sight.

An inquiry into the practical knowledge of hygiene possessed by school teachers.

We have been asked by the committee to bring these investigations under the notice of our readers and to ask their coöperation in obtaining information on the several points. As the subject is one of great interest and importance to the medical profession we hope that any facts or references of

a medical bearing relating to the subjects under consideration will be sent in to the chairman or to Mr. E. White Wallis at the Sanitary Institute, 72, Margaret-street, London, W.

THE PREVALENCE OF SMALL-POX.

THE returns of small-pox in London for the past week show the following figures. On Saturday, April 19th, there were 37 fresh cases notified and removed; on Sunday, the 20th, there were 29 fresh cases; on Monday, the 21st, there were 47 fresh cases; on Tuesday, the 22nd, there were 79 fresh cases; and on Wednesday, the 23rd, there were 58 fresh cases. In the county of Essex for the week ending April 19th there were notified 45 cases, making a total from Jan. 1st of 827 cases throughout the county. In Scotland, for the quarter ending March 31st, there were intimated to the Local Government Board for Scotland 614 cases of small-pox, of which 391 occurred in the burgh of Glasgow. The monthly figures are as follows: In January there were notified 75 cases, in February 207, in March 332; but of this last total 249 were notified during the first fortnight of March and only 83 during the last fortnight. The total number of cases notified throughout Scotland from April 1st to April 15th inclusive was 75, of which total the burgh of Glasgow contributed 31.

PSYCHOSIS POLYNEURITICA.

UNDER the title of "psychosis polyneuritica" the late Professor Korsakoff of Moscow described a form of mental disease characterised by marked failure of memory accompanied by signs of polyneuritis in the limbs, and claimed that it represented a clinical entity or disease *sui generis*. In the *Journal de Neurologie* of April 5th Dr. Serge Soukhanoff of Moscow gives an account of this little-known disease and adds illustrative clinical reports of cases supporting the view enunciated by Professor Korsakoff. The failure of memory, says Dr. Soukhanoff, is not merely a simple amnesia, for in addition to this false reminiscences, as it were, are present. This special form of mental trouble, however, is not accompanied by general enfeeblement of cerebral activity. The polyneuritis affects the limbs and produces both weakness and wasting of the muscles, especially as regards the legs. Psychosis polyneuritica may appear in old age when its special symptoms are liable to be masked by the general mental decay of senility, but in young subjects the disease can be recognised with clearness.

THE MEDICAL MISSIONARY ASSOCIATION.

Deputy Inspector-General George Saunders, C.B., M.D., presided at the annual meeting of this association which was held on April 18th in Exeter Hall. In addressing the meeting he said that one of the great advantages enjoyed by the medical missionary was that he could start work even before learning the language of his patients. To illustrate this fact, he said that at the battle of the Alma, after having attended to our own wounded, he climbed the heights which the enemy had just deserted and found a Russian soldier with one leg blown off by a cannon shot. Neither could speak the other's language, so conversation was impossible, but after making the soldier fairly comfortable he pointed upwards and the poor man bowed his head. The annual report, which was presented by Dr. J. L. Maxwell, the secretary, stated that there was a dearth of candidates for this work. The report showed that over 2,340,000 individuals, including 85,169 in-patients at 379 hospitals, were annually passing through the hands of regular medical missionaries, of whom there were at least 320 from this country. The association had a home with nine resident students and there were nine non-resident. Affiliated medical missions were being carried on in Islington and in St. Pancras. Dr. Maxwell, after presenting the report, mentioned that that day was the twenty-eighth anniversary of the funeral of David Livingstone. Livingstone, he said, would never have won the love and confidence of the natives as he did or have secured such an entrance to Africa for the Gospel if he had not been a medical missionary.

DOES THE DEAD BODY POSSESS PROPERTIES AKIN TO RADIO-ACTIVITY?

THE remarkable description which appears in our Paris notes of the photographs taken by M. Vignon and exhibited by him of the winding-sheet preserved at Turin and traditionally said to be that of Christ seems to justify the belief that the human body is either radio-active or that it gives off "vapours" which exhibit a similar action to light upon sensitive surfaces. We have frequently recorded in our columns the fact deduced in an elaborate research by Dr. W. J. Russell, F.R.S., that almost all substances are able in the dark to act on the photographic plate and to produce a picture. The phenomenon would appear to be established always in the presence of an oxidising process and Dr. Russell at length came to the conclusion that peroxide of hydrogen was the main factor concerned. In the case of the sheet in which tradition says that the dead Christ was wrapped we have the analogue probably of a photographic plate or sensitised film. The cloth was impregnated with oils and aloes. It is well known that fixed oils are sensitive to oxidation and aloes contain constituents, allied to the pyrogallic acid series, which would probably turn brown in the presence of an oxidising process. The action by which, therefore, the image of the dead Christ was recorded on the cloth would appear to be due to chemical change rather than to the effect of light. On this explanation an exact image, even to minute details such as wounds produced by the thorns and the marks of the blood drops and of flagellation by whips of a definite kind, is not by any means beyond the bounds of probability. It is an intensely remarkable and interesting instance of the light which the very latest developments of scientific research may throw on traditions and controversial matters in history. We are face to face undoubtedly with a set of new phenomena, giving distinct indications of the existence of emanations hitherto not recognised from both animate and inanimate bodies. The discovery of these emanations has been due to the fact that they affect the sensitised silver film, but there is no doubt that there is a very large number of substances also which are affected in a similar way, though not to the same degree as silver in the presence of albuminous substances. Natural photographs appear on all sides, as is proved by the simple experiment of placing an opaque object on grass or on fresh gravel exposed to the light. An exact outline of the shape of the object will be found on removing it after a time. The property of radio-activity is different, the substance in this case actually emitting radiations itself. The images due to the emanation of vapour are yet another but not less interesting phenomenon, as is abundantly manifested in the case of the traditional winding-sheet of Christ.

THE LONDON WATER BILL.

IT is useless for the Government any longer to profess that the London Water Bill which was introduced by Mr. Long is an attempt to carry out the recommendations of the Llandaff Commission. The first meeting of the Joint Committee of the two Houses of Parliament began to hear the case for this Bill on April 18th. Lord Llandaff during the course of the proceedings said

that the Commission of which he was chairman had recommended a "permanent and not an elected body," because it was thought that a representative body would be subject to pressure from the ratepayers and that the good conduct of the undertaking might thereby be injured. Those who believe in the infallibility of the London County Council and hold with Mr. Dickinson, a member of that body, that "representatives of the people" are *ipso facto* naturally endued with wisdom, dislike the Government Bill because the provision of water is not made a matter for their own unfettered control. Lord Llandaff on the contrary disapproves of direct popular control, and therefore the Government Bill, which provides for an elected controlling body, does not embody his recommendations. We must point out that it should not be supposed that because the Bill pleases no one it ought to be taken for granted that it must necessarily be a good one. Such an idea is a popular fallacy. We have given reasons why the Bill should not be passed and we regret that up to the present time the people of Kent are, as far as we know, the only water consumers who have taken any intelligent action in a matter which so deeply concerns all the inhabitants of "Water London."

DEATH TRAPS.

THE time is surely come when some means should be taken to avoid such a palpable waste of life as occurred in the fire at Hackney on the night of April 19th. The cause was the old one—namely, the built-out shop. Such built-out shops are nothing more or less than death traps and they exist in nearly all the roads leading out of London. The Brompton-road is full of them, so, too, is the Edgware-road, and their construction ought never to have been allowed. The history, of course, is obvious. There is a house with a garden in front of it belonging to, or inhabited by, one family. In course of time the garden, owing to the ever onward march of London, becomes too smutty and dirty for a garden so that the owner thinks that he may as well get some more rent out of the property by filling up the garden with a shop. The only entrance to, or exit from, the house is through this shop and if the shop catches fire the inhabitants of the house are practically doomed. This is what happened at Hackney. The shop caught fire owing to an oil lamp being upset and in 10 minutes the house at the back was alight from top to bottom. Seven people lost their lives. If something is not done to make these wretched places less dangerous the same kind of accident will happen again. It is, we suppose, impossible to pull down all the built-out shops in London, but at all events it is not impossible to get an ordinance of Parliament or of the London County Council to make it obligatory upon every owner of one of these death traps to provide at once one exit at least from the house other than that through the shop. Even a ladder and a trap-door in the roof would be better than nothing, but some safe method of exit should be made compulsory.

THE ROYAL PORTSMOUTH HOSPITAL.

MANY of our readers may have seen in certain local newspapers some virulent attacks upon the out-patient department of the Royal Portsmouth Hospital. Having obtained information from the best available sources on the matter we have no hesitation in saying that the case against the hospital has been exaggerated. In particular, the accusations of indelicacy and inhumanity should never have been brought. The buildings which are used as the out-patient department of the hospital are undoubtedly ill-fitted for their purpose. They are the old lock wards dating from the time of the Contagious Diseases (Human) Act and are only in temporary use as an out-patient department, seeing that as soon as funds are forthcoming to replace the building by one properly fitted for the purpose reconstruction will commence. We have never regarded a hospital as a holy institution which must not be criticised; on the contrary, we have always been prompt to find fault where fault existed, but our criticisms have always been directed towards amendment. We recommend our lay contemporaries, who have been very severe on the Royal Portsmouth Hospital, to remember that the only way to amend the existing faults at the hospital is to rebuild the place. To do this a large sum of money is required, and the only way in which it can be obtained is by generous public support. The journals which give circulation to incorrect and exaggerated statements with regard to mismanagement of hospitals and carelessness of hospital authorities are not serving the best interests either of those hospitals or of the public which looks to them for help in time of need. It is of no use to call attention to deficiencies which are only to be remedied by public support in such a way as to alienate public support. And that is what has been done in some quarters with regard to the Royal Portsmouth Hospital.

THE TYRANNY OF THE DOMESTIC SERVANT.

A CORRESPONDENT writes to us concerning what is rightly called "a disgusting habit and a constant danger to healthy and sick alike." She refers to the habit which housemaids and chambermaids have of "taking some old towel round with them and wiping all the bedroom utensils with it; they take it from room to room and everyone shares alike." Our correspondent maintains that this custom exists in all houses, whether private houses, lodging-houses, or boarding-houses. We cannot help thinking that our correspondent's experience of private houses is a somewhat unfortunate one but she says that she has over and over again seen the practice described. It is at first sight a filthy habit and yet except in the case of illness, to which we shall presently refer, it ought not to be a source of danger or of disgust. Any housemaid who knows her business, after emptying the basins and the other bedroom utensils, gives them a thorough rinsing with clean water. If this is done very little remains to be wiped off except a film of clean water. Water-bottles and tumblers should, of course, be cleansed separately. But in the case of a room belonging to a sick person a separate set of cloths should certainly be kept for that room alone. Preferably paper should be employed which can be used only once and then burned. But the difficulty is that most modern servants will not do as they are told. Take the average cook, for instance. She utterly declines to weigh materials for cooking; she will not roast meat but prefers to put it in the oven, or if, as a great favour, she puts it in front of the fire she is too lazy to baste it or to put a screen round it. But as regards cleanliness in bedrooms we are far better off than were our fathers some 50 years ago.

UNIVERSITY TERMS AND MR. RHODES'S LEGACIES.

THE legacies left by Mr. Rhodes to his university have given rise to a controversy in the columns of the *Times* as to the length of the working year, primarily, of course, at Oxford, and secondarily at other universities and university colleges. In brief, the arguments of the correspondents, who all write on the same side, are well expressed by the following passage from a letter of Professor E. Ray Lankester:—

> The studious student of a profession, be it medicine, engineering, or other requiring prolonged training, cannot afford to pursue a curriculum which is deliberately arranged so as to require two years of the student's life in order to enable him to profit by exactly the same amount of instruction and the same number of working days as are offered to him in one year in every other university and college in the civilised world.

Perhaps the "every other university and college in the civilised world" is a rhetorical flourish, for another correspondent

points out that the Yorkshire College is in as evil case as Oxford and that "the evil example of Oxford and Cambridge Universities as regards the length of their vacations more or less influences all educational institutions in this country." The broad fact, however, remains that in these utilitarian days no one learning or living by a calling or profession can afford to make holiday for more than half the year. At Oxford and Cambridge the working year consists of from some 21 to 24 weeks. Professor Ray Lankester proposes, and other correspondents agree with him, that the working year should be extended to 39 weeks. It is not within our province to suggest how this reform or revolution should be carried out, but that some such change will have to be made we see no reason to doubt.

THE DISTRIBUTION OF PLAGUE.

As regards the Mauritius a telegram from the Governor received at the Colonial Office on April 18th states that for the week ending April 17th there was one case of bubonic plague which proved fatal.

THE spring meeting of the Medico-Psychological Association will be held at the Surrey County Asylum, Brookwood, on Wednesday, April 30th. After an inspection of the asylum grounds by members at 11.30 A.M. and luncheon at 1.30 P.M. there will be a meeting of the divisional committee, followed by a general meeting at 2.45 P.M. Dr. Niel Harrismith Macmillan will communicate a paper on the Treatment of Colitis, and Dr. H. Corner a paper on Melancholia as the Expression of Physical Disorder. In the evening of the same day the members of the association will dine together at the Café Monico, Piccadilly, W.

AT the next meeting of the Medical Society of London, on Monday, April 28th, a special demonstration, illustrated by lantern slides, will be given on the Bilharzia Parasite by Lieutenant P. S. Lelean, R.A.M.C. The demonstration will be preceded by a surgical paper by Mr. A. H. Tubby. As a large attendance is expected intending visitors are reminded that they must be introduced by a member of the society. The meeting will be held at 8.30 P.M. at 11, Chandos-street, Cavendish-square, W.

OUR readers will find on p. 1223 the acknowledgment by Surgeon-General H. Skey Muir, C.B., of contributions which he has received to the "Y" fund. There are sound reasons why details concerning this fund should not be made public, but we cordially commend the case to our readers who can obtain information privately from Surgeon-General Muir.

THE Lord Mayor and the Lady Mayoress have issued invitations to an At Home at the Mansion House on April 28th to meet H.R.H. the Princess Louise Duchess of Argyll and His Grace the Duke of Argyll, K.T., on the occasion of the Centenary Commemoration of the London Fever Hospital.

MR. WILLIAM WALDORF ASTOR has given £20,000 for the endowment of existing unendowed professorships at University College, London, in connexion with the appeal for the endowment of advanced university education and research in London.

WE have already noted in THE LANCET that the London County Council has issued an order making chicken-pox a notifiable disease for a period of three months. This term has now been extended for a further period of six months commencing on May 6th.

DR. JOHN ANDERSON'S course of lectures on Diseases of Tropical Climates will commence on Monday, May 12th, at 4 P.M., and will be continued weekly during the summer session at St. Mary's Hospital Medical School.

REGULATIONS FOR THE ENTRY OF CANDIDATES FOR COMMISSIONS IN THE MEDICAL DEPARTMENT OF THE ROYAL NAVY.

THE new regulations for the first entry and promotions of naval medical officers were issued last week, as we briefly announced in THE LANCET of April 19th. We now give the regulations in full; our comments upon their salient points will be found in a leading article on page 1193 :—

ADMIRALTY, March 26th, 1902.

1. Every candidate for admission into the medical department of the Royal Navy must be not under 21 nor over 28 years of age on the day of the commencement of the competitive examination. He must produce an extract from the register of the date of his birth; or, in default, a declaration made before a magistrate, from one of his parents or other near relative, stating the date of birth. He must also produce a certificate of moral character, up to date, and a recommendation signed by a clergyman or magistrate, to whom he has been for some years personally known, or by the president or senior professor of the college at which he was educated.

2. He must be registered under the Medical Act in force, as qualified to practise medicine and surgery in Great Britain and Ireland.

3. He must declare—

(1) His age and date and place of birth.

(2) That he is of pure European descent[1] and the son either of natural-born British subjects or of parents naturalised in the United Kingdom.

(3) That he labours under no mental or constitutional disease or weakness or any other imperfection or disability which may interfere with the most efficient discharge of the duties of a medical officer in any climate.

(4) That he is ready to engage for general service at home or abroad as required.

(5) Whether he holds, or has held, any commission or appointment in the public services.

(6) That he is registered under the Medical Act in force as duly qualified professionally, and what diplomas, &c., he holds.

4. He must be free from organic or other diseases, and his physical fitness will be determined by a board of medical officers, who are to certify that his vision comes up to the required standard, which will be ascertained by the use of Snellen's test types.

5. The certificates of registration, character, and birth must accompany the declaration, which is to be filled up and returned as soon as possible, addressed as above.

6. Candidates will be examined by the Examining Board in the following compulsory subjects, and the highest number of marks attainable will be distributed as follows :—

	Marks.
a. Medicine, materia medica, therapeutics, and general hygiene	1200
b. Surgery and surgical anatomy	1200

The examination in medicine and surgery will be in part practical and will include, beyond papers, the examination of patients, the examination of pathological specimens, a knowledge of bacteriology, the performance of operations on the dead body, and the application of surgical apparatus. The attention of candidates is especially drawn to the importance of the section of operative surgery, as a competent knowledge in this subject is essential in order to qualify for a commission.

No candidate shall be considered eligible who shall not have obtained at least *one-third* of the maximum marks in each of the above *compulsory subjects*.

7. Candidates may be examined in the following voluntary subjects, for which the maximum number of marks obtainable will be—

	Marks.
Natural Sciences :—Chemistry (300); physiology (300); zoology (300); botany (300); geology and physical geography (300)	600
No candidate will be allowed to present himself for examination in more than two of these subjects.	
French and German (300 each)	600

A number less than one-third of the marks obtainable in each of these *voluntary subjects* will not be allowed to count in favour of the candidate who has qualified in the *compulsory subjects*.

The knowledge of modern languages being considered of great importance, all intending competitors are urged to qualify in French and German.

N.B.—The examination in chemistry will include the general principles of inorganic and organic chemistry; the preparation and properties of the chief non-metallic and metallic elements and their compounds; the preparation, properties, and classification of the more important compounds such as marsh gas, ethylene, acetylene, methyl and ethyl alcohols, glycerin, ether, formic, acetic, lactic, and oxalic acids; cyanogen and cyanides; carbohydrates; fats; proteids.

The examination in physiology will comprise the minute structure and functions of the various tissues and organs of the body, the physiology of the blood, the nature of food and the processes of its

[1] If any doubt should arise on this question the burden of clear proof that he is qualified will rest upon the candidate himself.

digestion, the mechanics of the circulation and of respiration, the physiology of nutrition, secretion, and excretion, animal heat, the nature of sensation, volition, reflex action, inhibition and influence of the nervous system on other organs and their functions.

The examination in zoology will include: the general principles of biology and a comparison of animals with plants; the distinctive characters of the larger groups of animals—the protozoa, cœlenterata, vermes, arthropoda, mollusca, echinodermata, and vertebrata—as illustrated by common types; the elements of embryology; animal parasites.

The examination in botany will comprise the general principles of the morphology and physiology of low forms of life—e.g., torula, bacteria, spirogyra, moss fern; the general morphology of flowering plants; diagnosis of the important British natural orders; medicinal plants.

The examination in geology and physical geography will be limited to general principles, such as the relations of the earth to the rest of the solar system; nature of the earth's crust and the chief kinds of rocks; general configuration of land and water; mountains; plains; islands; rivers; lakes; glaciers and icebergs; ocean currents; tides; winds; storms; dew; rain; climate; volcanoes; earthquakes; distribution of animal and vegetable life.

8. The appointments announced for competition will be filled from the list of qualified candidates, arranged in order of merit, but should it at any time be considered expedient to grant commissions beyond those periodically competed for the Admiralty have power to admit annually—

(*a*) Two candidates—proposed by the governing bodies of schools of medicine in the United Kingdom—who have satisfactorily filled the office of house surgeon in a large civil hospital for at least six months.

(*b*) Not more than six candidates, according to requirements, specially recommended by the governing bodies of such colonial universities as may be selected and whose qualifications are recognised by the General Medical Council.

Candidates so proposed are to be approved by the Director-General of the Medical Department of the Navy and are to be certified by the governing body proposing them as duly qualified according to the regulations in force for the entry of candidates.

In cases of colonial nominations registration of professional qualifications, as required by Clause 2 of these regulations, may be deferred until after the arrival in England of a candidate who has been passed on the station, but a commission as surgeon will not be granted until the certificate of the Registrar of the Medical Council has been produced at the Medical Department of the Navy.

Candidates from schools at home will be required to pass a physical examination in London, which will be arranged for by the Medical Director-General. Colonial candidates will have to pass a physical and test examination before a board of naval medical officers on the station.

9. Successful candidates, immediately after passing the examination in London, will receive commissions as surgeons in the Royal Navy and will undergo a course of practical instruction in naval hygiene, &c., at Haslar Hospital. Three prizes of the approximate value of £10 each will be awarded at the close of each session at Haslar to the students who have shown the greatest proficiency.

10. A fee of £1 will have to be paid by each candidate to entitle him to take part in the competition.

11. Surgeons on entry are only required to provide themselves with a pocket case of instruments, a stethoscope, and three clinical thermometers. All other instruments are provided at the public expense.

REGULATIONS AS TO MEDICAL OFFICERS.

In which are embodied the provisions of the Order in Council of March 24th, 1902.

Promotion.

1. An inspector-general of hospitals and fleets will be selected from amongst deputy inspectors-general who have in that rank—

Three years' full-pay service and who have not at any time declined foreign service except for reasons which the Lords Commissioners of the Admiralty regard as good and sufficient.

2. A deputy inspector-general of hospitals and fleets will be selected, for ability and merit, from amongst fleet surgeons.

3. (*a*) Subject to the approval of the Lords Commissioners of the Admiralty, rank as fleet surgeon will be granted to staff surgeons at the expiration of eight years from the date of promotion to staff surgeon, provided they are recommended by the Medical Director-General and have not declined service except for reasons which in the opinion of the Lords Commissioners of the Admiralty are satisfactory.

(*b*) Special promotions from the rank of staff surgeon to that of fleet surgeon will be made, at their lordships' discretion, in case of distinguished service or conspicuous professional merit. Such promotions will be exceptional and will not exceed the rate of one in two years; the total number at any one time of fleet surgeons holding that rank by such special promotions will not exceed six.

4. (*a*) Rank as staff surgeon will be granted, subject to their lordships' approval, to surgeons at the expiration of 12 years from the date of entry, provided they are recommended by the Medical Director-General and have passed such examination as may be required after completion of eight years from the date of entry in the rank of surgeon.

(*b*) Special promotions will be made, at their lordships' discretion, to the rank of staff surgeon, in cases of distinguished service or conspicuous professional merit. Such promotions will be exceptional, and not exceed the rate of one a year. The total number at any one time of staff surgeons holding that rank by such special promotions will not exceed eight. No officer will be so promoted unless he passes the examination prescribed for other surgeons, but in such a case the requirement of eight years' time in rank of surgeon will be dispensed with.

(*c*) When a surgeon's promotion to the rank of staff surgeon has been retarded by failure to pass the qualifying examination he will, should he pass and be promoted, be dealt with as follows:—

He will be granted the seniority as staff surgeon he would have received had he passed in ordinary course.

He will reckon service for increase of full and half pay only from the date of appointment to full pay as staff surgeon.

If on half pay, or if placed on half pay when promoted, he will receive the lowest rate of half pay of the new rank from the date of passing the qualifying examination.

Where delay in passing the qualifying examination may be due to unavoidable circumstances special consideration will be given.

(*d*) The seniority of surgeons on entry will be determined by the sum total of the marks they obtain at the London examination and those at the conclusion of the Haslar course and their names will then be placed in the official navy list. Surgeons entered without competition [2] will take seniority next after the last surgeon entered at the same time by competition.

(*e*) The examination for promotion to the rank of staff surgeon will be held by the Examining Board, to which a naval medical officer will be attached to conduct the examination in naval hygiene. The subjects of examination will be in writing and will include—

Medicine.
Surgery.
Pathology.
General hygiene.
Naval hygiene.

Earlier promotion to the rank of staff surgeon may be granted to those surgeons who before entry have held the post of house surgeon to a civil hospital of not less than 100 beds for a period of not less than six months, provided their conduct and professional abilities have been favourably reported on during the time they have served in the navy. They may be granted from six months to one year's seniority, according to the time they have held their civil appointments as house surgeon, but in no case will more than one year's seniority be granted.

This only applies to officers who enter by competition.

Relative Rank.

5. Is accorded as laid down in the King's Regulations and Admiralty Instructions.

6. *Full Pay and Allowances.*

Rank.	Daily. £ s. d.	Yearly. £ s. d.
Surgeon:		
On entry	0 14 0	256 10 0
After 4 years' full-pay service	0 17 0	310 5 0
,, 8 ,, ,,	1 0 0	365 0 0
Staff surgeon:		
On promotion	1 4 0	438 0 0
After 4 years' full-pay service in rank	1 7 0	492 15 0
Fleet surgeon:		
On promotion	1 10 0	547 10 0
After 4 years' full-pay service in rank	1 13 0	602 5 0
,, 8 ,, ,,	1 16 0	657 0 0
Deputy inspector-general	2 2 0	766 10 0
Inspector-general	—	1300 0 0 Consolidated.

On first appointment to the service medical officers will receive full pay from date of appointment, but subject to the provisions of Art. 1342, Clause 2, of the King's Regulations, 1899.

7. The inspectors-general at Haslar and Plymouth Hospitals and the corresponding officer at Chatham Hospital when the new hospital is completed will be granted an allowance of 10*s.* a day as charge pay.

8. The hospital allowances for naval medical officers at home and abroad, in lieu of provisions, for themselves and servants, and for fuel and lights, are as follows:—

	At home.	Abroad.
Deputy inspectors-general	£67	£112
Fleet surgeons and staff surgeons	53	112
Surgeons	39	108

9. An allowance of 5*s.* a day, in addition to full pay, is granted to the senior medical officer, being a fleet or staff surgeon, of a flagship bearing the flag of a commander-in-chief on a foreign station or of the senior officer commanding the Channel Squadron; and an allowance of 2*s.* 6*d.* a day to the senior medical officer, being a fleet or staff surgeon, of the ship of a commodore or of a senior officer commanding a foreign station. An allowance of 2*s.* 6*d.* a day may also be granted to the senior medical officer, being a fleet or staff surgeon, in ships carrying the flags of flag officers or the broad pennants of commodores not commanding stations. The conditions governing the payment of these allowances are laid down in Art. 1432 of the King's regulations.

10. The following charge allowances may be granted to medical officers in charge of hospital ships:—

If above the rank of fleet surgeon	5*s.* a day.
If of the rank of fleet surgeon or junior	3*s.* 6*d.* a day.

11. The fleet and staff surgeons serving at the Admiralty and the Marine rendezvous will be granted the hospital allowance of £55 a year in addition to the usual lodging money.

Medical officers conducting the course of instruction at Haslar Hospital will receive the following allowances:—

Two senior officers employed upon this duty	£150 a year each.
The junior officer assisting	£50 a year.
The junior officer instructing the sick berth staff	£50 a year.

Medical officers employed elsewhere than at a hospital, and not victualled in kind, receive an allowance of 1*s.* 6*d.* a day in lieu of provisions, fuel, and lights, under the conditions laid down in the King's Regulations.

12. The travelling allowances, extra pay, lodging money, and compensation for losses are fixed for naval medical officers according to their relative rank in the service.

[2] See Clause 8 of the regulations for entry.

13. *Half Pay.*

Rank.	Daily.	Yearly.
Surgeon:	£ s. d.	£ s. d.
Under 2 years' full-pay service	0 6 0	109 10 0
After 2 years' full-pay service	0 7 0	127 15 0
,, 4 ,, ,, ...	0 8 0	146 0 0
,, 6 ,, ,, ...	0 9 0	164 5 0
,, 8 ,, ,, ...	0 10 0	182 10 0
,, 10 ,, ,, ...	0 11 0	200 15 0
Staff surgeon:—		
On promotion	0 12 0	219 0 0
After 2 years' full-pay service in rank	0 13 0	237 5 0
,, 4 ,, ,,	0 14 0	255 10 0
,, 6 ,, ,,	0 15 0	273 15 0
Fleet-surgeon:—		
On promotion	0 17 0	310 5 0
After 2 years' full-pay service in rank	0 18 0	328 10 0
,, 4 ,, ,,	0 19 0	346 15 0
,, 6 ,, ,,	1 0 0	365 0 0
Deputy inspector-general:		
On promotion	1 5 0	456 5 0
fter 2 years' full-pay service in rank	1 7 0	492 15 0
,, 4 ,, ,,	1 9 0	529 5 0
Inspector-general	1 18 0	693 10 0

Retirement.

14. Compulsory retirement will be as follows:—

Inspector and deputy, inspector-general of hospitals and fleets.	At the age of 60, or at any age if he has not served for five years. *Except that if in any particular case the Lords Commissioners of the Admiralty may consider that the interests of the public service will be materially advanced by the further retention of an inspector-general of hospitals and fleets on the active list, the age for the retirement of such inspector-general may be extended to 62.	To be retired irrespective of age if found physically unfit for service.
Fleet surgeon, staff surgeon, and surgeon.	At the age of 55, or at any age if he has not served for five years.	

* Order in Council, May 17th, 1890.

15. Voluntary retirement and withdrawal will be allowed as follows:—

(*a*) Every officer will have the option, subject to their lordships' approval, of retiring after 20 years' full pay service on the scale of retired pay provided in paragraph 16, or with a gratuity on the scale provided in that paragraph if not eligible for retired pay.

(*b*) At the expiration of eight, 12, or 16 years' full-pay service every officer will be permitted, subject to their lordships' approval, to withdraw from the naval service, receiving a gratuity on the scale laid down in paragraph 16.

The name of an officer so withdrawing will be removed from the list of the navy, with which all connexion will then be severed.

(*c*) Voluntary retirement and withdrawal at the discretion of their lordships will be allowed, as a rule, only when an officer is unemployed or serving at home. Under very special circumstances, however, it may be permitted in the case of an officer serving abroad, provided he pays his successor's passage to relieve him.

(*d*) Applications from officers to retire or withdraw, or resign their commissions, will receive every consideration, but no officer will, as a rule, be permitted to resign under three years from the date of entry.

16. Gratuities and retired pay will be awarded on retirement and withdrawal on the under-mentioned scale:—

Rank.	Gratuities.	Daily.	Yearly.
Surgeon and staff surgeon:—	£ s. d.	£ s. d.	£ s. d.
After 8 years' full-pay service	1000 0 0	—	—
,, 12 ,, ,, ,,	1500 0 0	—	—
,, 16 ,, ,, ,,	2250 0 0	—	—
Fleet surgeon:—			
After 20 years' service (including proportion of half-pay time)	—	*1 0 0	365 0 0
After 24 years' service (including proportion of half-pay time)	—	*1 2 6	410 12 6
After 27 years' service (including proportion of half-pay time)	—	*1 5 0	456 5 0
After 30 years' service (including proportion of half-pay time)	—	*1 10 0	547 10 0
Deputy inspector-general ...	—	1 15 0	638 15 0
Inspector-general	—	2 0 0	730 0 0

* To obtain this rate an officer must hold the commission of fleet surgeon. † Or on compulsory retirement at the age of 55.

17. An officer retired with less than 20 years' service on account of disability, contracted in, and attributable to, the service, will receive the half pay of his rank, or, with the consent of their lordships, a gratuity on the scales given in paragraphs 16 and 18(*b*), but such officer will not be entitled to receive any special compensation for the disability in addition to the gratuity as above.

18. An officer retired with less than 20 years' service on account of disability, contracted in but not attributable to the service, will receive:—

(*a*) If he has over eight years' full-pay service, either a gratuity on the scale given in paragraph 16, or half pay, according as their lordships think fit;

(*b*) If he has less than eight years' full-pay service such gratuity as their lordships think fit, not exceeding the rate of £125 for each year of full-pay service.

19. Under circumstances other than those specified in paragraphs 17 and 18, and other than misconduct, neglect of duty, &c., an officer retired with less than 20 years' service will not be allowed half pay or retired pay, but will receive a gratuity on the scale laid down in paragraph 16, if he has eight years' full-pay service, and on that provided in paragraph 18 (*b*) should his full-pay service not amount to eight years.

20. The power vested in their lordships of granting reduced rates of half pay and retired pay in cases of misconduct is extended to the award of gratuities on retirement, and the gratuity awarded will be reduced to such an amount as is thought fit.

21. An officer retiring after 20 years' full-pay service will be eligible, if recommended by the Medical Director-General for distinguished or meritorious service, to receive a step of honorary rank, such step to be awarded at their lordships' discretion, and not to confer any claim to increase of retired pay or of widow's pension.

23. All retired officers will be liable, till the age of 55, to serve in time of declared national emergency, in a rank not lower than that held on retirement.

This liability will not exist in cases of withdrawal on the conditions specified in paragraph 15 (*b*).

23 Retired officers will receive special consideration as regards appointments on shore connected with the Admiralty, now filled by civilians.

Widow's Pension.

24. When an officer retires, or withdraws, *on a gratuity*, his widow and children have no claim to pension or compassionate allowance.

Miscellaneous.

25. A special cabin will be appropriated to the fleet or staff surgeon or the surgeon in charge of the medical duties in each ship.

26. Special regulations have been made as regards the mess expenses of medical officers appointed to the several divisions of Royal Marines for limited periods.

27. Every medical officer will be required to undergo a post-graduate course of three months' duration at a metropolitan hospital once in every eight years (should the exigencies of the service permit), and this as far as possible during his surgeon's, staff surgeon's, and fleet surgeon's period of service. While carrying out this course the medical officer will be borne on a ship's books for full pay and will be granted lodging and provision allowances, and travelling expenses as for service under the regulations to and from his home or port, but he will be required to pay the necessary fees for each course. The medical officer will be required to produce separate certificates of efficient attendance in the following:—

I. The medical and surgical practice of the hospital;
II. A course of operative surgery on the dead body;
III. A course of bacteriology;
IV. A course of ophthalmic surgery, particular attention being paid to the diagnosis of errors of refraction;
V. A practical course of skiagraphy.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE LORD MAYOR presided at a meeting of the council of the Metropolitan Hospital Sunday Fund which was held in the saloon of the Mansion House on April 17th.

On the motion of the Bishop of LONDON, seconded by Mr. R. B. MARTIN, the appointment of Sir Edmund Hay Currie by the General Purposes Committee as secretary was confirmed.

Sir EDMUND HAY CURRIE assured the council that he would do all in his power for the benefit of the Fund.

The LORD MAYOR pointed out that Mr. J. S. Gilliatt was particularly suited to fill the post of honorary secretary vacated by Sir Edmund Hay Currie, and on the motion of Mr. R. B. MARTIN, seconded by Sir H. BURDETT, the election of Mr. J. S. Gilliatt was carried unanimously.

Mr. R. B. MARTIN said that he thought it was desirable that members of the council should use their personal influence with the ministers of various denominations to make efforts such as had been made by the present Dean of Worcester, Canon Fleming, and others in their respective parishes.

The LORD MAYOR pointed out that it was necessary to get subscriptions before Hospital Sunday and not to depend merely on people coming to church on that occasion. There would be many claims upon the public in the Coronation year, but he hoped that the gifts to the Hospital Sunday Fund would be augmented.

Archdeacon SINCLAIR moved—

That in the opinion of this meeting it is desirable that a special effort be made this year to increase the amount of the collections on Hospital Sunday, and that it be referred to the General Purposes Committee to make such arrangements as they shall consider advisable.

This was carried unanimously.

Sir HENRY BURDETT regretted that although the number of contributing congregations had increased 75 per cent., the amount of the collections had not risen correspondingly. Some 120 congregations contributed last year, the total result being £36,000, which sum was £4000 lower than in 1896, when there were 10 congregations less contributing. What was required was that a large body of laymen—as well as the press—should assist the clergy.

The LORD MAYOR expressed the hope that the present would be a record year. He would not be satisfied with £60,000.

A vote of thanks to the Lord Mayor terminated the proceedings.

DIPHTHERIA AND ITS TREATMENT AT COLCHESTER.

IN THE LANCET of April 12th, p. 1051, we referred briefly to the recent outbreak of diphtheria at Colchester and the result of treatment with, and without, the use of antitoxin. At the meeting of the Colchester Town Council on April 2nd the medical officer of health (Dr. G. Brown) presented his report, from which we take the following figures: "Death-rate of total notifications from diphtheria, 13·24 per cent.; all in infectious diseases hospital, 13·88, with antitoxin 15·95, without antitoxin 6·52; outside hospital, 12·82; with antitoxin from July 17th to December 31st, 8·33." The figures as given by Dr. Brown in his report of cases treated in the hospital with antitoxin during the year 1901 are as follows:—

Month.	Cases treated with antitoxin.	Deaths.
January	2	0
February	0	0
March	1	0
April	0	0
May	8	4
June	16	12
July	42	1
August	28	0
September	23	4
October	20	2
November	13	1
December	10	2
Total	163	26

The figures for July, during the last 14 days of which antitoxin was universally used, are very striking. According to the report of Dr. Louis Cobbett and Dr. G. S. Graham Smith 27 patients were admitted in July before the 16th, of whom 15 had received antitoxin before admission, and not one of these died. The total number of admissions according to Dr. Brown's report for the month was 52, and of the 10 treated without antitoxin two died. It will be remembered that from July 17th antitoxin was administered to every patient upon his admission unless he had been treated with this agent before admission. This decision was arrived at after an investigation and sundry recommendations had been made at the request of the town council, the investigators being Dr. Cobbett and Dr. Graham Smith. These gentlemen have now published their report and on the subject of antitoxin they say:—

In considering the case mortality the year should be divided into two halves. Before July 16th antitoxin was not given as a routine treatment on the admission of the patient at the Mile End Hospital but appears to have been administered to a few serious cases only and to some others who developed alarming symptoms later. During this period reliance was placed on antiseptic sprays to destroy the bacilli in the throat. After July 16th antitoxin was administered in accordance with a resolution of the sanitary committee, to every case, as soon as possible after admission, unless this had been previously done, and no attempt was made to destroy the bacilli in the throat. During the first of these periods 89 patients were treated in the hospital and 21 deaths occurred. The case mortality was accordingly 23·6 per cent. During the second period 113 cases were treated and eight deaths occurred. The case mortality was therefore 7·8 per cent. But of the 89 patients treated during the first period 15 are known to have had antitoxin administered before admission; and among these there were no deaths. Moreover, during the second period two patients were treated without antitoxin by their private medical attendants and one of them died. Therefore, if we wish to compare the mortality among the patients treated at the hospital on the system which prevailed during the first period with that among the patients treated before or immediately after admission with antitoxin we must make a correction for these persons. When this has been done we find that the mortality was 28·9 and 5·6 per cent. respectively. The fall in the case mortality from 23·6 to 7·8 which occurred in the hospital on the introduction of the systematic use of antitoxin, or, if we prefer to take the corrected figures, from 28·9 to 5·6 per cent., affords a striking example, if any were needed, of the value of that remedy.

At the meeting of the town council Mr. Alderman Henry Laver, M.R.C.S. Eng., L.S.A., said that the statistics contained in Dr. Brown's report were a mystery to him. He could not in any way make them agree with those supplied by the sanitary inspector up to July 17th by order of the committee. He would ask Dr. Brown whether he thought the administration of antitoxin as he gave it in the majority of his cases from two to 10 days after admission was administration at the earliest stage of the disease or whether it was not an example of a perfunctory administration of an unbeliever in its value which vitiated all the conclusions which he drew from his figures. According to the report of the meeting published in the *Essex County Standard* of April 5th:—

Alluding to Dr. Brown's remarks as to the necessity for early treatment Alderman Laver went on to quote cases (giving the names of the patients) showing that this had not always been done at the hospital. In May three were admitted, having had antitoxin before they came in, and one child admitted on May 26th died on May 28th, having had the antitoxin on the day of its death. In June a patient admitted on June 8th died June 21st, having antitoxin four days after admission; another admitted the same day died on the tenth, being treated two days after admission; a case admitted on June 9th died on June 19th, not having antitoxin till ten days after admission; three others admitted on June 10th had the antitoxin three days after, and two admitted on June 15th had it two days after, all subsequently dying. Another, admitted June 22nd, died July 2nd, had antitoxin administered two days after admission; another had antitoxin before admission, and recovered. In June there was a patient admitted on the 19th and died on the 20th, who did not have antitoxin. In May he found that there were four cases treated without antitoxin and all died. The other cases in that month he had been unable to get particulars of, but he felt strongly that the report was unfair and one-sided, with an animus clearly shown, objecting to the use of antitoxin. He did not move any amendment, because it would be useless, the report being that of the medical officer, and being sent as such to the Local Government Board.

Mr. Laver also remarked that in the *Daily News* of April 1st there was an article on the subject stating that the Sanitary Committee was in doubt how to act. Whoever sent this mischievous paragraph would, he thought, find out his mistake. We have referred to the *Daily News* of April 1st (the date is eminently suitable) and find the paragraph in question under the heading of "News from the Provinces," and the last three lines run: "While the medical men thus disagree the members of the Sanitary Committee find it very difficult to decide." Statements such as this we can only stigmatise as flapdoodle, a substance which readers of "Peter Simple" will remember is defined as "stuff to feed fools on." We notice that on the same page as the paragraph to which we refer is a two-column advertisement of that quack institution the Drouet Institute.

To return to the report of Dr. Cobbett and Dr. Graham Smith the conclusions to which they come are as follows:—

Finally, we wish to draw particular attention to the following facts: 1. The striking diminution in the case mortality at Mile End Hospital which followed the systematic use of antitoxin. 2. The subsidence of the epidemic during the season when diphtheria is commonly most prevalent. 3. The opening of the schools in September without any increase in the prevalence of the disease. 4. The persistence of diphtheria bacilli for long periods in certain of the convalescents and contacts. 5. The success of preventive measures based upon the belief that diphtheria is spread mainly by personal contact and through the intermediation of healthy persons and others who are not recognised by the means usually employed to be suffering from that disease.

The Town Council of Colchester has, we are glad to see, taken another important step as regards sanitation in the district. At a special meeting of the Sanitary Committee on March 3rd it was agreed:—

1. That it is desirable (in view of the expiration of the present medical officer's term of office) to appoint a medical officer who shall (a) devote his whole time to the duties of his office; (b) hold the diploma of Public Health; (c) perform the duties prescribed by the Local Government Board; (d) undertake entire charge of the infectious hospital and isolation home and dispense the medicines there required;

(e) conduct all bacteriological examinations; (f) act as public analyst; (g) make all water analyses; and (h) generally perform such other duties as may be required. 2. That the salary be £400 a year. 3. That the Local Government Board be asked whether they are prepared to sanction the foregoing proposals.

On March 28th the council in committee approved and endorsed this recommendation and recommended the council accordingly.

The importance of a medical officer of health being debarred from private practice is a point upon which we have insisted over and over again. Still, we think that a medical officer of health may be allowed to act as sanitary officer to the local hospital and we suggest that the medical officer of health of Colchester when appointed might be placed on the staff of the Colchester Hospital. He might also be allowed to take fees for bacteriological and analytical work if, that is to say, the two offices of public analyst and of medical officer of health are held by the same person. In our opinion, however, they should be wholly distinct.

Looking Back.

FROM

THE LANCET, *SATURDAY, APRIL* 24, 1824.

The best Medical Treatment of Tic Douloureux.[1]

with which I am acquainted, is the exhibition of the carbonate of iron. Mr. HUTCHINS, of Nottingham, has published a work on the disease now under consideration, in which he speaks strongly in favour of the above medicine; it certainly is an admirable remedy—and the profession is much indebted to Mr. H. for having recommended it. I may here remark, it is much to be regretted that country practitioners do not more frequently publish the result of their observations and experience; much valuable knowledge is lost to the world from their neglect of this important duty.

In speaking of the carbonate of iron, and of medicine in general when given for the cure of Tic Douloureux, it cannot of course succeed should the disease be otherwise than functional,—if it should be caused as in the case of Dr. PEMBERTON for example, (who suffered more probably than any other human being from this malady), by a piece of bone projecting into the brain, medicines will prove utterly unavailing as regards cure—and temporary ease is all that can be afforded.

ST. BARTHOLOMEW'S HOSPITAL.

There has been another highly interesting case at this hospital of the *hydraulic* species, the particulars of which we will give in a subsequent number. We are informed that it was a case of ascites, but the water, by some miraculous power, suddenly became converted—not into urine, but a fine chopping boy, who took the liberty of leaping into the world about half an hour previous to his intended passage through the canula of the trocar!!

[1] Excerpt from report of a lecture delivered by Sir Astley Cooper in the Theatre of St. Thomas's Hospital on Thursday evening, April 15th, 1824.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8884 births and 5224 deaths were registered during the week ending April 19th. The annual rate of mortality in these towns, which had been 18·2, 17·6, and 17·4 per 1000 in the three preceding weeks, rose again last week to 18·3 per 1000. In London the death-rate was 18·1 per 1000, while it averaged 18·4 in the 75 other large towns. Among these towns the lowest death-rates were 6·1 in Burton-upon-Trent, 6·2 in Hornsey, 8·6 in Kings Norton, 9·3 in Bournemouth, 10·0 in East Ham, 10·3 in Hastings, 11·5 in Leyton, and 12·0 in Willesden and in Derby; the highest rates were 22·9 in Newcastle-on-Tyne, 23·1 in Huddersfield, 23·2 in Stockton-on-Tees, 23·7 in Liverpool, 25·9 in Merthyr Tydfil, 26·7 in Wolverhampton, 27·1 in Tynemouth, and 27·6 in Burnley. The 5224 deaths in these towns last week included 550 which were referred to the principal zymotic diseases, against 572 and 596 in the two preceding weeks; of these 550 deaths 150 resulted from measles, 144 from whooping-cough, 72 from small-pox, 63 from diphtheria, 52 from diarrhœa, 36 from scarlet fever, and 33 from "fever" (principally enteric). No death from any of these diseases was registered last week in Hornsey, Hastings, Brighton, Ipswich, West Bromwich, Coventry, Rotherham, Cardiff, or Merthyr Tydfil; while the highest zymotic death-rates were recorded in West Ham, Northampton, St. Helens, Burnley, Barrow-in-Furness, and West Hartlepool. The greatest proportional mortality from measles occurred in Croydon, Willesden, Northampton, St. Helens, Rochdale, Burnley, Barrow-in-Furness, Gateshead, and Rhondda; from diphtheria in Hanley; and from whooping-cough in Handsworth, Aston Manor, Barrow-in-Furness, Hull, West Hartlepool, Gateshead, and Newcastle. The mortality from scarlet fever, from "fever," and from diarrhœa showed no marked excess in any of the large towns. Of the 72 fatal cases of small-pox belonging to these towns registered last week 42 belonged to London, 21 to West Ham, three to Walthamstow, two to East Ham, and one each to Tottenham, Willesden, Leyton, and Swansea. The number of small-pox cases under treatment in the Metropolitan Asylums hospitals, which had been 1526, 1522, and 1437 at the end of the three preceding weeks, had further declined to 1431 at the end of last week; 328 new cases were admitted during the week, against 389, 376, and 274 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday, April 19th, was 2155, against 2126 and 2146 on the two preceding Saturdays; 269 new cases were admitted during the week, against 250, 228, and 264 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 360, 317, and 299 in the three preceding weeks, rose again last week to 316, but were 45 below the corrected average. The causes of 55, or 1·1 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Salford, Bradford, Leeds, Newcastle, and 42 other smaller towns; the largest proportions of uncertified deaths were registered in Portsmouth, Birmingham, Liverpool, St. Helens, Sheffield, Rotherham, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 20·3, 21·3, and 22·1 per 1000 in the three preceding weeks, further rose to 24·6 per 1000 during the week ending April 19th, and exceeded by 6·3 per 1000 the mean rate during the same period in the 76 large English towns. Among these Scotch towns the death-rates ranged from 19·9 in Paisley and 21·2 in Dundee and in Leith to 31·2 in Perth and 34·0 in Greenock. The 795 deaths in these towns included 21 which were referred to whooping-cough, 18 to measles, 10 to diarrhœa, seven to diphtheria, four to "fever," two to scarlet fever, and one to small-pox. In all 63 deaths resulted from these principal zymotic diseases last week, against 59, 59, and 56 in the three preceding weeks. These 63 deaths were equal to an annual rate of 2·0 per 1000, which was slightly above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 13, 14, and 21 in the three preceding weeks, were again 21 last week and included eight in Aberdeen, seven in Glasgow, and two in Edinburgh. The deaths from measles, which had been 14, 11, and 10 in the three preceding weeks, rose again last week to 18, of which six occurred in Glasgow, five in Edinburgh, and four in Perth. The fatal cases of diarrhœa, which had declined from 25 to eight in the four preceding weeks, rose again to 10 last week, and included six in Glasgow. The deaths from diphtheria, which had been six, five, and two in the three preceding weeks, increased again last week to seven, of which three were registered in Glasgow and two in Leith. The fatal cases of "fever," which had been one, four, and five in the three preceding weeks, declined again to four last week, and all occurred in Glasgow, where the death from small-pox also was recorded. The deaths referred to diseases of the respiratory organs in these towns, which had been 173, 160, and 188 in the three preceding weeks, further rose last week to 199, and were 69 in excess of the number in the corresponding period of

last year. The causes of 18, or more than 2 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·5, 26·8, and 26·7 per 1000 in the three preceding weeks, further declined to 23·0 per 1000 during the week ending April 19th. During the past four weeks the death-rate has averaged 26·0 per 1000, the rate during the same period being 17·9 in London and 18·6 in Edinburgh. The 167 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 27 from the number in the preceding week, and included 10 which were referred to the principal zymotic diseases, against seven, six, and 11 in the three preceding weeks; of these, four resulted from diarrhœa, two from measles, two from scarlet fever, one from diphtheria, and one from whooping-cough. These 10 deaths were equal to an annual rate of 1·4 per 1000, the zymotic death-rates during the same period being 2·3 in London and 1·6 in Edinburgh. The deaths from diarrhœa, which had been one and four in the two preceding weeks, were again four last week. The mortality both from measles and from whooping-cough showed a slight decline from that recorded in the preceding week. The 167 deaths in Dublin last week included 39 of children under one year of age and 39 of persons aged upwards of 60 years; the deaths of infants were slightly in excess of the number in the preceding week, while those of elderly persons showed a slight decline. One death from violence and five inquest cases were registered; and 63, or more than a third, of the deaths occurred in public institutions. The causes of six, or nearly 4 per cent., of the deaths in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: F. Bradshaw to the *Hibernia* and to the *Hermione;* P. W. MacVean to the *Bellona;* A. W. B. Livesay to the *Orion;* and E. Folliott to the *Pembroke* for Chatham Dockyard.

ROYAL ARMY MEDICAL CORPS.

Lieutenant H. Ensor, D.S.O., is selected for duty with the Egyptian Army.

Lieutenant-Colonel W. B. Slaughter performs the duties of Principal Medical Officer, Southern District, until further orders. Major D. R. Hamilton has embarked on board the hospital ship *Nubia* for South Africa.

Major W. H. P. Lewis (retired list) is selected for duty in the Home District.

IMPERIAL YEOMANRY (IN SOUTH AFRICA).

37th Battalion: Francis William Jackson to be Medical Officer, with the temporary rank of Captain.

IMPERIAL YEOMANRY.

The undermentioned officer resigns his commission and receives a new commission subject to the provisions of the Militia and Yeomanry Act, 1901, retaining his present rank and seniority, viz.:—

Glamorganshire: Surgeon-Lieutenant R. M. Moynan.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 2nd Devonshire: Surgeon-Lieutenant H. W. Webber resigns his commission. 4th Durham: The undermentioned officer resigns his commission:—Surgeon-Lieutenant R. Hanton.

Rifle: 1st Dumbartonshire: Surgeon-Captain C. F. Spinks resigns his commission. 2nd Tower Hamlets: Surgeon-Lieutenant J. S. Swain to be Surgeon-Captain.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major D. L. Anderson having resigned his Volunteer appointment, ceases to belong to the Army Medical Reserve of Officers.

Surgeon-Lieutenant C. T. Green to be Surgeon-Captain.

Surgeon-Lieutenant-Colonel E. J. Lloyd, V.D., 1st Cheshire and Carnarvonshire Royal Garrison Artillery (Volunteers), to be Surgeon-Lieutenant-Colonel.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANY.

Home Counties: Surgeon-Lieutenant C. J. Deyns, from 1st Bucks Volunteer Rifle Corps, to be Surgeon-Lieutenant, and to command under paragraph 55A Volunteer Regulations.

SOUTH AFRICAN WAR NOTES.

Lieutenant M. C. Beatty, R.A.M.C., is reported ill with enteric fever at Harrismith. April 20th.

The following were discharged from hospital to duty for the week ended April 12th: Lieutenant H. A. Bransbury, R.A.M.C., and Lieutenant E. G. Ffrench, R.A.M.C.; Surgeon-Captain C. McB. Dawson, 7th New Zealand M.I., and Civil Surgeons Woods, Whyte, and Oxford.

THE KING'S BIRTHDAY.

Notice is given in the *London Gazette* that the King's birthday will be celebrated in London and at all home stations on Friday, May 30th next, i.e., as being the most suitable time of year for military display. At all foreign stations His Majesty's birthday will be celebrated this year on Monday, Nov. 10th.

MENTIONED IN DESPATCHES.

In despatches relating to field operations in Northern Nigeria published in the *London Gazette* of April 18th Dr. Longley, principal medical officer, is mentioned for his assistance on all occasions.—Dr. Blair, senior medical officer with the Yola Expedition, "performed yeoman service attending to the many casualties (he sucked the poison from Colonel Morland's wound), 41 in all, and also saw to and attended the enemy's wounded."—"Dr. J. C. Whiteley, the only medical officer attached to the expedition [Ishan and Ulia countries] had a tremendous lot of work, and his care of, and attention to, the sick and wounded night and day without a relief was unceasing."—"Lieutenant H. Boulton, I.M.S., had sole medical charge of an expedition which at one time consisted of 2500 men. He was assisted by no other medical officer and his work at Fardiddin under fire was heavy. He brought back the wounded some 340 miles to the coast, only losing one man."

In a despatch relating to field operations with respect to Eldama Ravine, Uganda Protectorate, Dr. Drake-Brockman is praised for his assiduous attentions to sick and wounded, European and African, and Dr. Drake-Brockman himself specially praises Captain Gorges in command of the expedition for his prompt attention and skill in treating those of his men who were wounded by poisoned arrows.

AFFAIRS IN SOUTH AFRICA.

According to a Government paper recently issued it appears that the numbers and the mortality in the South African refugee camps are decreasing. Their aggregate population is now 111,508, somewhat less than it was. The deaths in the camps situated in the four colonies of Natal, Cape Colony, Orange River, and Transvaal numbered 402 during the month of March, which is a decided decrease. The casualty returns from the seat of war, in addition to those resulting from the fighting, show that there is still much enteric fever and that this disease, although less prevalent than it was, is nevertheless widely distributed. It is understood that with the view of preventing or limiting the spread of this fever the army medical authorities have arranged for an experimental trial being made of Dr. H. E. Leigh Canney's method of sterilised water-supply for the troops. We have previously urged that a practical trial of it should be undertaken and that the results should be reported. It is not very satisfactory to learn through Laffan's Agency some unpleasant information about the alleged condition of the first consignment from Germany of comforts for the Boer refugees. Some of the cases containing second-hand clothing had reached Bloemfontein where they were opened and unpacked. It appears that this second-hand clothing had been packed in an unwashed condition and that after having passed through the tropics its state was—well, such as might be imagined.

DEATHS IN THE SERVICES.

Inspector-General Alexander Watson, R.N. (retired) at West Derby, Liverpool, on April 17th. He served in the Black Sea during the Russian war of 1854–55 (mentioned in despatches, medal with clasp, and Turkish medal) and in China in 1858–59, where he was wounded (mentioned in despatches, medal with clasp). In Australia he attended the Duke of Edinburgh after the attempted assassination of the Prince and was with the King (then Prince of Wales) in India in 1876–77.

Brigade-Surgeon-Lieutenant-Colonel William Moir, M.A., M.B., I.M.S. (retired), on April 10th, aged 69 years. He was educated at Aberdeen University and joined the Bengal Establishment in 1860. He was appointed superintendent of

the Meteorological Observatory at Meerut in 1863 and acted at the same time as civil surgeon at that station. For many years he officiated as chemical examiner to the Government of the North-West Provinces, and retired from the service in 1891.

Major Sidney Offord Stuart, R.A.M.C., at Winburg on April 18th, from dysentery. He joined the service in 1882 and was promoted to the rank of surgeon-major in 1894.

Correspondence.

"Audi alteram partem."

BIRMINGHAM CONSULTANTS AND THE WORKING-CLASSES.

To the Editors of THE LANCET.

SIRS,—As the difficulty created in Birmingham by the attempt to establish a consultative institution in the city excited a good deal of general interest in the profession you may be glad to know that the scheme has been abandoned by its promoters. In the last report of the Birmingham Hospital Saturday Fund, where this is admitted, it is stated that "the claims of the more thrifty and self-respecting members of the community to obtain consulting advice at a fee of half a guinea, rather than be forced to obtain it at the hospitals for nothing, have been set at nought." This statement, like so many others which have originated from the same source, is not true. The consultants of Birmingham have all along maintained their willingness, under suitable conditions, to see working-men for half a guinea. Recently the Birmingham Ebenezer Provident Sick Society, one of the largest industrial organisations in the city, which had affiliated itself to the Consultative Institution, found itself obliged to look elsewhere owing to the failure of that scheme. The officials applied to the representatives of the consultants and the following correspondence shows the result.

I am, Sirs, yours faithfully,
Birmingham, April 19th, 1902. ROBERT SAUNDBY.

[COPY OF CIRCULAR LETTER ADDRESSED TO THE CONSULTANTS.]

87, Cornwall-street, Newhall-street, Birmingham.

DEAR SIR,—A short time ago the Consultants' Representative Committee was approached by the executive of the Ebenezer Sick Provident Society to ask whether members of their society could be seen for half a guinea. In reply the following letter was sent:—

"DEAR SIR,—In reply to your inquiry whether the consultants of Birmingham would be willing to see your members for a fee of 10s. 6d. I am requested to draw your attention to the following passage from a letter which appeared in the Birmingham newspapers on May 18th, 1901, which was signed by all the members of my committee, and which has been acted on repeatedly. The passage is as follows: 'The consultants and specialists in Birmingham agree to see any persons whose circumstances justify it for the modified fee of half a guinea upon the recommendation of a medical practitioner, and where this cannot be obtained for any reason they will dispense with it, only reserving the right to protect themselves against abuse.'

If you should desire any further information Dr. Saundby and I will be glad to talk the matter over with you some afternoon, and if you will let me know I have no doubt we can arrange a time of meeting convenient to each of us.

I am, yours faithfully,
THOMAS WILSON, Hon. Sec."

In consequence of this letter a meeting was held as suggested and it was agreed that members of the Ebenezer Sick Society would be seen by the consultants and specialists of Birmingham for half a guinea on the condition that they should be people whose circumstances justified the concession, and it was further agreed to accept the recommendation of the society as *prima facie* evidence of this fact. It was promised on behalf of the society that no patient will be sent to a consultant except on the recommendation of one of the medical officers of the society and that the society will not allow the few well-to-do persons who are members of the society to obtain consultations under this arrangement. It was pointed out to the representatives of the society that the committee could not speak definitely for every individual consultant in Birmingham, but that it was able to do so for the great majority.

We shall be glad if you will kindly let us know before Saturday next should you not care to coöperate, so that we may take steps to prevent your being troubled with applications under this arrangement.

We are, dear Sir, yours faithfully,
ROBERT SAUNDBY, Chairman.
THOMAS WILSON, Secretary.
Consultants' Representative Committee.

[COPY.]

Birmingham Ebenezer Provident Sick Society, Steelhouse-lane, Birmingham.

Memorandum. Feb. 27th, 1902.

From Alfred Mole, Secretary, 16, Wretham-road, Handsworth, Birmingham, to Robert Saundby, Esq.

DEAR SIR,—We cordially endorse the circular you propose sending to the consultants of Birmingham in reference to the above society.

JOSIAH COX, President.
ALFRED MOLE, Secretary.

[COPY.]

March 11th, 1902.

DEAR SIR,—I have now pleasure in sending you the list of consultants which I promised to obtain for your private use. Inclosed is the complete list of all those consultants who are able and willing to undertake to see members of your club on the conditions laid down at our meetings.—Believe me to remain, dear Sir, yours faithfully,
THOMAS WILSON.

Mr. Alfred Mole, 16, Wretham-road, Handsworth.

The result of the circular was to obtain a list of 53 consultants, including specialists in all departments.

[COPY.]

To Thos. Wilson, Esq. March 13th, 1902.

DEAR SIR,—I thank you very much for your letter and list of consultants; this I am sure will be very satisfactory to the committee. This, I have no doubt, will be endorsed by resolution at the first meeting, in which case I will send you a copy. I venture to think that between us we have gone a long way in the settlement of a much vexed public question. I am, dear Sir, yours very respectfully,
ALFRED MOLE.

Birmingham Ebenezer Provident Sick Society, Steelhouse-lane, Birmingham.

Committee meeting, held March 27th, 1902.

[COPY OF RESOLUTION.]

"That this meeting heartily expresses its warm appreciation of the manner in which the consultants and specialists of Birmingham have met this society, whereby our members and their wives may receive expert advice for the nominal fee of 10s. 6d."

Signed on behalf of the meeting,
ALFRED MOLE, Secretary.

FUND FOR THE ENDOWMENT OF UNIVERSITY COLLEGE, LONDON.

To the Editors of THE LANCET.

SIRS,—May I ask for space in your columns to call public attention to the appeal now issued by University College for funds in aid of higher education and research in London? By the new statutes of the University of London a teaching university has been created. It is impossible, however, for the University to exercise its proper functions with regard to teaching and research until it has capital funds and adequate buildings at its disposal. The part of the Imperial Institute allocated to the University does not more than suffice for the purposes of examination and secretariat.

University College, London, has from its foundation 75 years ago been a seat of university education and research. Its yearly output of original work is not exceeded by that of any university in the land. Its buildings, freehold land, and endowments represent a capital value of at least £800,000, and its present accommodation could be trebled by the extension of the buildings in its own grounds. It is evident, therefore, that the policy of incorporating the College in the University is an important step in building up the Greater London University on existing institutions. In order to aid the policy of incorporation the Drapers' Company have offered £30,000 to the University; and for the same purpose a former student has offered an equal sum to University College. But these sums are quite insufficient. A further sum of £110,000 is required in order to free the whole of the existing College buildings for university purposes and render incorporation possible.

Much larger sums, amounting in all (including the £110,000 already mentioned) to over £1,000,000, are necessary in order to perfect and complete the College and to render incorporation fruitful by placing at the disposal of the University funds sufficient to complete the College equipment for higher teaching and research. The estimated sums may be divided as follows: (*a*) £250,000 for completing the College buildings, thus providing adequate accommodation for teaching and research in such important departments as modern languages, chemistry in all its branches, geology, physiology, botany, engineering in all its branches, advanced medical studies, &c.; (*b*) an annual income of £6000 a year, or a capital sum of £200,000, for departmental expenses, including maintenance of laboratories, libraries, &c.; and (*c*) a yearly sum of £20,000, or a capital sum of £700,000, for the endowment of existing unendowed chairs and for the foundation of additional professorships and lectureships.

The great need of our country at the present time is an increase in the supply of men with trained brains, men who will act as leaders in the world of thought and of affairs and in the struggle for mastery over the forces of nature. The recent industrial development of Germany, the growing ascendancy of America, are largely due to the recognition of this fact and to the provision by the State or by private individuals of the necessary means—of universities well equipped with laboratories and well supplied with endowments.

I earnestly appeal, therefore, to every one who has the interests of his city and country at heart to help in thus developing the University of London, so that it may be worthy of the capital and a fruitful source of power to the empire. A public meeting has been arranged to take place in support of the scheme at the Mansion House on May 9th and the Lord Mayor has kindly consented to preside. A detailed statement of the needs of University College, London, with some account of its previous history and the part it has already played in the increase of knowledge, has been drawn up in support of the appeal and may be had on application to the secretary at the College.

Donations and subscriptions should be sent to the treasurer, Sir R. Farrant, at the College.

I have the honour to be, Sirs, your obedient servant,

(Signed) REAY, President.

University College, London (Gower-street, W.C.), April 11th, 1902.

LARGE DOSES OF STRYCHNINE IN SURGICAL SHOCK.

To the Editors of THE LANCET.

SIRS,—The surgeon is not content with the triumph of having chased the physician out of the abdomen; he must needs go in search of fresh laurels and this time in the domain of pharmacology. In the new field his experiments are conducted with a boldness which surpasses his surgical daring. Hitherto strychnine has been regarded as one of those drugs which is poisonous within narrow limits, but the surgeon subscribes to no such restricted creed.

In THE LANCET of April 12th (p. 1025) Mr. Mayo Robson tells us that he injects under the skin one-tenth of a grain before commencing with the anæsthesia and after the operation one-twentieth of a grain is injected every two hours if called for. In the same issue (p. 1063) Mr. C. Hamilton Whiteford is still bolder, for in an operation for pylorectomy lasting two and a half hours he injected intravenously one-fifth of a grain of strychnine along with three pints of saline fluid and one ounce of brandy three-quarters of an hour before starting with the anæsthetic—certainly a fair start. During the last one and a half hours of the operation he injected into the substance of the great pectoral muscle repeated doses, the total amounting to half a grain. Now, if I mistake not the operator, this woman patient received seven-tenths of a grain or nearly three-quarters of a grain of strychnine within the space of three hours. No doubt the maximum pharmacopœial dose (one-fifteenth of a grain) may be greatly exceeded, but one may question if the quantities administered by Mr. Whiteford are within the bounds of safety. In an old number of THE LANCET there is an account from America of a patient who by mistake took one or two grains of strychnine (I think the higher dose) and recovered. The medical men kept the patient under the continuous influence of chloroform. At the time the tale was treated as an Americanism, but after all, from what we now know of the mutual antagonism of strychnine and chloroform, the case may have been genuine. Our surgical friends tell us that they give these large doses without the "slightest twitching" (Mr. Whiteford), but this is precisely what we should look for while the patient is under the anæsthetic, because after an injection of strychnine should there be an increased activity of the reflex apparatus a few whiffs of the ether or chloroform will abolish the reflex. Even after the inhalation is stopped ether and chloroform remain for some time in the blood and will antagonise the strychnine, but they are more quickly eliminated than the strychnine, and what then? Do the surgeons never find disagreeable tonic and clonic spasms of the muscles of the extremities remaining after the effect of the anæsthetic has passed off? Do they never see frequently-recurring or long-protracted spasms involving the respiratory muscles and threatening life itself—or worse? I think that before accepting the teaching of the new pharmacology we are entitled to enlightenment on these points.

I am, Sirs, yours faithfully,

Leeds, April 14th, 1902. GORDON SHARP.

PAYING WARDS OR PAYING HOSPITALS.

To the Editors of THE LANCET.

SIRS,—I welcome the article on this subject which appears on page 1124 of THE LANCET for April 19th. The writer, however, appears to be under some misapprehension, as the idea of a paying hospital is not new and the proposal was thoroughly threshed out and received the support of the medical profession and THE LANCET 25 years ago, as will be seen by reference to the leading articles on the subject published in THE LANCET of April 28th, May 12th, and June 23rd, 1877, where the whole matter is dealt with exhaustively and in detail. Many things have happened during the quarter of a century which has elapsed and for the greater part of that period a home or paying hospital which was established as a result of the discussion in 1877 has been conducted at a profit at Fitzroy House, Fitzroy-square. As the person who was most identified with the original proposal for the establishment of a pay hospital proper, I of course recognise that it is a good thing in itself and has much to recommend it on its merits, as I proved in my book "Pay Hospitals of the World," published in 1879. Experience demonstrates, however, that the pay hospital, whilst it will meet the needs of many persons who are prepared to pay for hospital treatment at a remunerative rate, cannot effectually prevent hospital abuse nor restrict the advantages offered by free hospitals to those members of the community who are alone entitled to receive these benefits.

For these reasons and others the paying hospital has little or nothing to do with the proposal to establish pay wings containing nothing but paying wards in connexion with the general hospitals in this country. This latter development is called for because there is no other means whereby the ever-increasing growth in the number of hospital patients can be effectually regulated and hospital abuse prevented. We must have a reform in our present methods of hospital relief or there is a very real danger that the rising generation will demand free hospital treatment as a birthright no matter what their means may be, and so great injury must ensue to the moral fibre of the nation as a whole. Free medical relief has a tendency, unless given with a due regard to the social position of the recipient, to make against habits of thrift and self-dependence.

I see good cause to believe that the London hospitals are within a measureable distance of the day when the revenue available for their support will be ample to meet the expenditure, providing the relief they give is strictly confined to those classes alone who are entitled to receive it. Twenty-five years ago it was held by THE LANCET, by the profession, and by many hospital managers "that the necessary accommodation for paying patients might be in part provided by existing hospitals, so far as London is concerned and that all that would be needed would be to adopt a certain portion of the space for paying patients and to decide upon a scale of charges, sufficient to pay the expenses of maintenance." Since then the ever increasing pressure upon hospital beds and the necessity for securing in any system of paying wards that the just rights and privileges of the whole of the medical profession should be conserved, have convinced those who have studied the question most closely, that the paying wards must be in a separable building, with an entrance quite distinct and apart from the free hospital and its administration department. Then, under fixed conditions, it will be possible to secure that (1) all abuse in connexion with the in-patient departments of the free hospitals shall cease; (2) adequate accommodation for every class of person who desires hospital treatment for payment in whole or in part; (3) the medical service shall be paid for and organised upon a plan which shall protect the interests of every member of the profession, including the members of the hospital staff as well as the general practitioners; (4) the wisest economy in administration shall be secured; (5) the training of nurses for private work shall at length be made efficient; and (6) a check will be effectually placed upon the improper growth of medical treatment in hospitals by preventing those who can afford to pay from obtaining such relief without payment, as they do at present.

It follows, in my judgment, that whereas the pay hospital, as the experience of Fitzroy House shows, can be established and made a success financially there is a danger that pay hospitals upon commercial lines might result in injury rather than benefit to the great body of medical practitioners. This danger would be obviated by the institution of the paying ward in connexion with the large general hospitals of this country upon the plan I have indicated, because in this way, and in no other way that I have been able to discover, can adequate guarantees be secured that the present large

and increasing abuse of the free hospitals in Great Britain shall be rendered impossible and that the just rights of the profession should be conserved.

I am glad that THE LANCET has dealt with the matter so ably in its leading columns. I hope that the questions raised may be fully discussed in THE LANCET and that the managers of any general hospital who would be prepared to provide a site on which a pay wing could be erected and to accept such pay wing as a free gift, subject to the undertaking that they will administer and maintain it on conditions to be mutually agreed, will communicate with me on the subject. In no better way can the general feeling of hospital managers be accurately ascertained or the necessary steps be attempted whereby pay wings may be secured without trespassing upon the finances of the hospitals or the energies of hospital managers, the whole of which are required to enable them to provide the means to defray the cost of the free departments of our general hospitals.

I am, Sirs, yours obediently,

HENRY C. BURDETT.

The Lodge, Porchester-square, W., April 19th, 1902.

OPERATIONS FOR THE EXTRACTION OF CATARACT.

To the Editors of THE LANCET.

SIRS,—The large percentage of cases in which prolapse of the iris occurred after extraction of cataract in the series of operations reported by Captain R. H. Elliot, I.M.S., in THE LANCET of April 12th, p. 1031, must lead to the supposition that some other factors may have contributed to such a high percentage—viz., 21·14—a result much in excess of the figures of Knapp as well as contrary to the usual experience. Apart from the unruly conduct of the patients after operation it seems probable that atropine had been freely used beforehand in order to produce sufficient mydriasis to allow of the preliminary step described of capsule rupture with Bowman's needle, and that thereby the normal tension of the eyeballs in these senile or prematurely old patients had been raised to such an extent as, coupled with the associated paralysis of the sphincter iridis, directly to conduce to this accident. It would be interesting to learn if my surmise be correct.

I am, Sirs, yours faithfully,

W. A. LEE.

Junior Constitutional Club, Piccadilly, W., April 12th, 1902.

THE DISSEMINATION OF SMALL-POX AND THE HOLIDAYS OF LONDON CHILDREN.

To the Editors of THE LANCET.

SIRS,—The 50,000 London children who look to spend their holidays in country cottages are threatened with disappointment on account of the fear of small-pox. If they are left for all August in the streets about their homes there will be a loss both in national strength and in childhood's joy. Medical officers are, of course, right in wishing to protect their own areas from disease; but I would, with your permission, submit some reasons why they should not altogether exclude London children. 1. The isolation of London is impossible. There is daily contact between people coming and going to the country. The tramps alone constitute a perpetual danger. The only security of an area from small-pox is in the vaccination of its own inhabitants; this is so effective that the disease is less dangerous than fever. 2. The small-pox is affecting only a very small proportion of the population. There are fewer small-pox patients than there are fever patients. The committees sending the children would be responsible that all sent are vaccinated and that none go from districts known to be infected. 3. I would therefore ask country medical officers not to set their faces against our plan of sending children to country cottages—I would even go further and ask them, on national grounds, to forward the plan and induce landlords and cottagers to welcome the children. The strength of the nation lies more and more in the town. If town life is not made healthy our people cannot be strong either to labour or to fight. Town and country are parts of one whole. Country people making town children welcome in country families and interesting them in country pursuits and giving them the strength of country air and change would take away some of the hardships of town life.

I am, Sirs, yours faithfully,

SAMUEL R. BARNETT.

Toynbee Hall, Whitechapel, E., April 22nd, 1902.

CARDIAC INADEQUACY.

To the Editors of THE LANCET.

SIRS,—Will you allow me a word by way of comment on Dr. Alexander Morison's interesting paper on Cardiac Inadequacy, published in THE LANCET of April 19th, p. 1098? That individuals are variously endowed in respect of cardiac adequacy, and that some come into the world with less than their proper share of cardiac muscle, few will doubt. It is evident that those thus slenderly endowed are placed at a disadvantage when stress is put upon the cardio-vascular system, and that under such stress the circulation will fail more readily in their case than in that of their more highly endowed brethren. So far I am at one with Dr. Morison, but I venture to think that the two cases which he brings forward in support of this thesis are valueless for the purpose.

From the facts as related by him one can have little hesitation in affirming that in each of the cases the small heart bore up bravely and well to the end, and was irresponsible alike for the dropsy that was present—in the first case at least it is evident that Dr. Morison regarded the dropsy as of cardiac origin—and for the premature death that occurred. Dr. Morison expressly tells us that the cardiac walls were hypertrophied and that the chambers were *relatively small*; this conclusively proves that systole was adequate and that there was no back pressure; had systole been inadequate for a protracted period dilatation of the inadequate chamber must inevitably have resulted.

I am, Sirs, yours faithfully,

Wimpole-street, W., April 20th, 1902. HARRY CAMPBELL.

OÖPHORECTOMY FOR CANCER.

To the Editors of THE LANCET.

SIRS,—In your issue of April 19th I see that Dr. A. T. Davies, in referring to the operation of oöphorectomy for mammary cancer, says that I consider it "horrible" (p. 1090). Will you allow me to point out that this is incorrect. What I really did say was, that the operation is a "horrible *mistake*": (1) because removal of the ovaries tends to favour rather than to prevent the development of cancer, in support of which I instanced the great frequency of cancer after ovariotomy for non-malignant ovarian cysts, &c.; (2) because of its proved curative inefficaciousness, for although hundreds of these operations have been done, not a single cure can be instanced; and (3) because there never has been any scientific basis for such a procedure. The essential thing I wished to call attention to was the mistake that had been made in resorting to this operation in these circumstances, and the qualifying adjective used is a matter of no importance.

I am, Sirs, yours faithfully,

Clifton, Bristol, April 19th, 1902. W. ROGER WILLIAMS.

THE OBSTETRICIAN—PHYSICIAN OR SURGEON?

To the Editors of THE LANCET.

SIRS,—Under the above heading is published in THE LANCET of April 19th, p. 1138, a letter from Dr. Stitt Thomson, junior physician to the Lincoln County Hospital. The same letter appeared in the *Lincolnshire Echo* of April 9th, on the eve of the meeting of the hospital board. In it he states: "but that I was remonstrated with by the senior surgeon is untrue." On March 24th, two days after returning from abroad, I wrote to Dr. Stitt Thomson and in my letter I said: "I may remind you that when I objected to your doing certain minor operations some months back you assured me that you wished to do nothing which was against the custom of the hospital and the wishes of the staff." This statement of mine remained uncontradicted until the publication of the *Lincolnshire Echo* above mentioned. I can only repeat that I did remonstrate with Dr. Stitt Thomson and express regret that not only has he apparently forgotten that fact but has

also forgotten his assurance to me that he wished to work harmoniously with the rest of the staff.

I am, Sirs, yours faithfully,

April 21st, 1902. W. A. CARLINE.

"HYGIENE FOR STUDENTS."

To the Editors of THE LANCET.

SIRS,—Anyone reading your review of my Hygiene would conclude that I had been so indiscreet as to recommend a particular London baker and silly enough to do so in connexion with steam baking which is already practised in the army and navy, by all wholesale bakers, and by an increasing number of retail bakers. I have done nothing of the kind, but I state that besides the use of yeast and of baking-powders for raising bread there are the processes of Nevill, the volatilisation of ammonium carbonate within the dough, and of Dauglish, the forcing in of carbonic dioxide prepared without; in both, I mention incidentally that steam ovens are employed. This is not a "puff" of Nevill's bread which, as a matter of fact, I do not like and Nevill may, for ought I know, have been dead as long as Dr. Dauglish has and, like him, may not have been a baker at all. They were, however, in their way as much inventors as were Bessemer and Siemens in theirs, and it would not be right, if it were possible, to describe procedures ignoring the name of the discoverers.—I am, Sirs, yours faithfully,

April 21st. EDWARD F. WILLOUGHBY.

THE NEW GENERAL HOSPITAL AT MONACO.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE hospital accommodation at the various winter stations on the French Riviera in many instances leaves much to be desired, especially when the large number of tourists and visitors is taken into consideration. For surgical operations or the nursing of fever cases more numerous hospitals, and more paying hospitals, would be a great boon. In this respect, as in many other matters relating to public health, the Principality of Monaco has taken the lead and set a good example. The ruling Prince of this small but model State has made it a matter of personal pride to confer on his subjects and visitors the advantage of a model hospital. For this purpose there has been no stinting. Indeed, the chief fault to be found with the new hospital is that it can scarcely serve as an example because of the lavish expenditure which has been generously incurred. The neighbouring municipalities are not in a position to devote such a large sum to the purpose. High up on the mountain, cut out of the rock, to the extreme west of the Principality, a beautiful site has been created. Here perfect shelter from the cold winds is secured, and yet, in consequence of the elevation and of the proximity of the sea, there is always some movement of the air, so that the relaxing closeness of the lower levels is avoided. The principle adopted for the general wards is that of one-storeyed pavilions with a two-storeyed administrative block in the centre, the whole connected by a handsome open colonnade or gallery and built on the highest of a succession of terraces. A carriage-road goes up zigzag between these terraces and there is also an elevator. The lower terraces are planted with trees and the highest terrace, on which the hospital stands, is some 260 feet above the sea-level. The soil is calcareous and permeable, so that the rain-water passes away quickly and the atmosphere is remarkably dry and wholesome. Numerous olive, eucalyptus, and carouba or locust trees, with some palms and yuccas, provide an evergreen and cheerful outlook which is enlivened by the gay colours of the flowers which never cease to bloom in this most favoured spot.

The central, or administrative, block is perhaps more open to criticism than are the other parts of the hospital. The general design is somewhat marred by a vestry which seems to have been added as an afterthought to a very large, perhaps unnecessarily large, chapel. It juts out like a little out-house. On the other hand, the dispensary is small, probably too small, and the light is not of the best. The worst error, and this is really a serious one, is the position of a water-closet which is in the centre of the building and can ventilate only into a dwelling-room, for it has no window opening on to the outside. Nor is it usual to place the room for hydropathic treatment in the administrative department and against the kitchen wall. But as the entrance is absolutely separate no serious inconvenience is likely to arise. The pavilions for the patients consist of an oblong general ward with a transverse building at one end where there are a dining-room for convalescents, a bedroom for the nursing sister, a bath, a washroom, closets, &c. The wards have high windows on each side and are very substantially built. All the angles are rounded off. The walls are covered with glazed tiles and paint that can be freely washed. 45 cubic metres of space are allowed for each bed and there are only 12 beds in each ward. The closets are well ventilated, trapped, and flushed; and, indeed, these might be considered in every respect model wards but for the fact that perhaps too much confidence has been placed in the benign character of the climate. Doubtless the windows may remain open nearly the whole year round, but even at Monaco night frosts are not unknown and no method of ventilation has been provided. The upper window-panes have small louvre openings and therefore it is not necessary to open the entire window; still, the fact remains that air cannot enter except by the door or by the window. The mildness of the climate has also been utilised as an excuse for not providing any heating apparatus. Consequently on the rare occasions when it is cold there will be a still greater temptation to keep the windows carefully closed. It might be prudent to replace some of the window-panes by wire gauze which causes less draught than the louvre opening, cannot be closed or covered over, and has the further advantage of keeping out the mosquitoes. Experience will probably show that in regard to ventilation some alterations will have to be made.

The door of the ward opens on to the gallery that connects all the buildings and faces the door of a small isolation pavilion which is at the rear of the general ward. Here are three rooms which can hold either one or two beds, a closet, a bath-room, and a room for a nurse. Patients who need to be isolated will be treated in these smaller pavilions together with certain cases of contagious disease such as typhoid fever. But these smaller pavilions are too near the general wards for infectious cases, such as scarlet fever, small-pox, &c. Indeed, in regard to infectious diseases there is a lower terrace where it is proposed to erect wooden huts in case of an epidemic. This, however, would be a mistake. The isolation hospital for infectious diseases cannot be too far away from the general hospital. It is not only a question of isolating the patients, but the attendants should be beyond the possibility of inter-communication. The whole question of infectious diseases, especially of small-pox, is a separate matter, which I propose to discuss on another occasion.

On the western side of the terrace there are a maternity ward and a surgical ward. By the side of the latter there is a model aseptic operating pavilion. Here there is a large operating-room with a northern light coming from the ceiling and from both sides. The cold due to so much glass is counteracted by heating coils and at night both gaslight and electric lighting are provided. There are a separate compartment for administering chloroform and two small rooms for preserving the instruments, sterilising the bandages, &c. There is also a minor operating room for the less important cases. The maternity pavilion has two storeys and 16 single-bedded rooms. Four of these rooms can be absolutely isolated in case of puerperal fever. At the opposite, or east, end of the terrace a special pavilion has been built for paying patients. As with the maternity department, there are two floors—the ground floor for men and the first floor for women—and each floor has a separate entrance. There are 12 rooms for each sex, two bath-rooms, a common day- and dining-room, and a room for the attending nurse. These rooms are handsomely furnished and a fireplace is provided in each. Access can be obtained to the paying pavilion without passing through other parts of the hospital. Finally, the laundry, the disinfecting station, the mortuary, and the post-mortem room are all at some distance from the other parts of the hospital and on a lower terrace.

Taken altogether, the new Hôtel Dieu of Monaco may certainly be considered as a model structure. The construction of hospitals according to modern sanitary principles is a speciality in itself, and though the building fever has prevailed for many years in the Principality the architects skilled in the designing of luxurious villas and hotels are not necessarily acquainted with the exigencies of modern science in regard to hospitals. It is in the great capitals of Europe rather

than in a pleasure resort that authorities on hospitals may be found. Nevertheless, the hospital of Monaco has been built by M. Delefortrie, architectural inspector-general of the Principality. The Prince, however, first appointed a commission to visit and to report on some of the principal hospitals in Europe, and it was with the knowledge thus acquired that under the personal direction of the Prince the plans were finally prepared and adopted. The results correspond with the great care that has been bestowed on the work. Few buildings are so little open to criticism and it is doubtful whether a municipality would have ventured to spend so freely the money of its electors. In this case, however, all the financial difficulties have been solved by the munificence of the Prince. It is not yet known how much the hospital has, and will, cost, though the amount is roughly estimated at some £50,000 to £60,000. There has been no subscription nor is the budget of the Principality in any way affected by this expenditure. The Prince, who possesses large landed estates in France and elsewhere, has been able to give the entire sum out of his private purse. The product of the tax imposed on the company which owns the Casino remains untouched and can still be devoted in its entirety to the cost of administering the Principality and to the relief of many of the rates and taxes which in other localities have to be raised from the inhabitants to meet the cost of municipal government. But if the Prince has thus been endowed with both the means and the generosity to construct this splendid hospital it will easily be understood that he is not able to endow it with a sufficient income to meet indefinitely the cost of management. There are certainly the resources which the old hospital possesses. But these are insufficient, even with the addition of the profits that may be derived from the paying patients. The Prince, therefore, is now anxiously endeavouring to devise some means of securing the permanent income needed. Already the French colony at Monaco has manifested a desire to help and has provided the money necessary to defray the cost of maintaining two beds at the hospital for one year. The subscriptions raised from the French residents and visitors for this purpose may be renewed from year to year and thus less scruple will be felt on their part in availing themselves of this charity should any French subjects need hospital treatment. It is to be hoped that the British visitors and residents will not delay in following this example. Though there are no poor among the British subjects at Monaco, nevertheless many cases may arise when treatment in a modern and model hospital would provide a better chance of recovery than such attendance as can be obtained in an hotel or lodging-house. Then, as regards operations, the operating-room of the hospital affords facilities and a security against septic poisoning that could not be found in an hotel. The knowledge that this resource is now available will be welcome to all visitors who frequent the Principality and their appreciation of this advantage should be manifested in a practical and substantial manner. Paying patients can be attended at the hospital by their own medical attendants, whatever may be their nationality, and therefore all that is needed for the treatment of the most serious medical or surgical cases is now available and is offered gratuitously to the poor and on moderate terms to those who can afford to pay. The ruling Prince in devoting a portion of his private income to this humanitarian purpose will have earned the special gratitude of many sufferers and the admiration of all sections of the community. The delegates attending the International Conference of Medical Press Associations were present at the inauguration of the hospital, listened attentively to the full explanations given by Dr. L. Colignon, consulting physician to his Highness, and joined heartily in expressing their admiration and in offering congratulations to the Prince on the great work which he had so successfully accomplished.

Monaco, April 19th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Dangers of Electric Lighting.

ON April 17th there was a lively illustration in Manchester of some of the possibilities connected with electric lighting. "Short-circuiting" somewhere in the Market-street area is said to have been the cause. Three fires at least broke out and the fire brigade was unusually busy. Many business establishments were left without electric light and with their lamps broken. Some men working in a man-hole in Market-street narrowly escaped suffocation. One of the cables went wrong and "the copper wires comprising it coming into contact the short circuit was established, there was a fusion, and the trouble was begun." The coating of the wires being highly inflammable the mains and man-holes were quickly filled with suffocating smoke. The outbreaks of fire were happily quickly subdued, and no very serious damage was done. What with these underground liabilities, and the network of telegraph, telephone, and trolley wires hanging over head like the sword of Damocles, the triumphs of modern electrical science seem well calculated to supply us with sensational incidents.

Sanitary Guardianship of the Port.

At the last meeting of the Manchester Port Sanitary Authority Dr. A. M. N. Pringle, medical officer, reported that 151 vessels were inspected during the previous month, 121 being British. Defective or insanitary conditions were found in 35 British and in six of the 30 foreign vessels, which tells against us. It was decided, subject to the consent of the Local Government Board, to purchase a steam launch at a cost of £1000 for the removal to shore of infectious cases and also, in accordance with a suggestion of the medical officer, that the authority should be empowered to deal with cases of small-pox as they are now authorised to do with cholera, yellow fever, and plague.

Soot-fall in Manchester.

An experiment was described at a recent meeting of the city section of the Society of Chemical Industry by Mr. W. Irwin which was made with the view of ascertaining the quantity of soot which falls in Manchester. He took a sample of the snow which had fallen in February in a garden at Cheetham Hill and which had lain for 10 days on the ground. The snow was melted and the dry residue was extracted, weighed, and analysed, when it was found to contain soot equivalent to 10·7 pounds per acre, or three tons to the square mile. He said that the sample represented a condition which prevailed for at least 100 square miles in a circle round the town hall, "so that 300 tons of soot had been precipitated from the chimneys of Manchester during the 10 days." The sample contained 48·6 per cent. of carbon, 6·9 per cent. of heavy oil and grease, and 44·5 per cent. of ash. Mr. Irwin asked if "spreading 30 tons of soot a day, with two tons of accompanying grease to give it adhesiveness, over the buildings of Manchester" was to be continued. He hoped to see the day when large consumers of coal would be in a position to "gassify" their fuel. This picture of the impurity of the Manchester air seems dark enough, but it was not the blackest, for Dr. Knecht of the Technological School submitted results of an analysis of the snow made by him from a sample taken in Whitworth-street, which is nearer the centre of the city than is Cheetham Hill, on the ninth day after the fall, which showed three times the quantity of soot found in Mr. Irwin's sample. The mere money value of the fuel wasted must be enormous; the injury to the physical well-being of the population, to their social and personal comfort and happiness, and the damage to clothing and to all fabrics which are light in texture and colour must be almost beyond computation, yet there are people who oppose, and, indeed, bitterly resent, any efforts for the reduction of the smoke nuisance.

Chemical Manufacturers and the Corporation.

At a meeting of the Society of Chemical Industry held on April 11th the clauses of the Manchester Corporation Bill were discussed so far as they related to the discharge of effluents from works into the city sewers. The primary object of the clauses was the protection of those who worked in the sewers, but one of the speakers feared that "the chemical manufacturers were going to be greatly harassed," and he said that it could not be expected that the effluent from chemical works should be pure water. It may be remembered that a serious explosion took place some time ago from a workman lighting a match in a sewer in which bisulphide of carbon had found its way from some chemical works. Perhaps none of the King's subjects are so sensitive as to the curtailment of their liberty to create nuisances as are the chemical manufacturers, and none use their liberty more freely, so that it is encouraging to find that Dr. Dreyfus, who is deputy chairman of the Rivers Committee, speaking as a chemical manufacturer, said that "he had not the remotest fear that any firm would be unduly pressed by the Bill." It

seems that the clauses complained of have been copied almost exactly from a London County Council Act, to which attention had been called by the Home Office.

Macclesfield Lady Practitioners.

It was stated in a Manchester paper of April 14th that the lady practitioner who recently resigned her position at the Macclesfield Infirmary has, with another lady practitioner, "declined to accept appointment in connexion with the local medical aid societies, which have about 30,000 members, and their action is said to have created considerable disappointment." This action of loyalty to their profession redounds to their credit.

Medical Officer of Health of Crewe.

At a special meeting of the Health Committee of the Crewe Town Council held on April 18th Dr. Laird, assistant medical officer of the county of Lanark, was appointed medical officer of health of the borough at a commencing salary of £350 a year. There were 21 applicants.

April 22nd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

The Prevention of Tuberculosis.

THE branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis, which was established as the result of a large meeting held in Cardiff in October last, is more than justifying its existence. Circulars and placards relating to spitting have been sent by the executive committee to the managers of railways, tramways, and omnibuses in South Wales and Monmouthshire and sanitary authorities have been urged to adopt voluntary notification of phthisis. It has now been decided to issue 100,000 copies, one half in Welsh, of a popular educational pamphlet upon consumption and the distribution will be probably through the sanitary authorities. At a meeting of the committee held in February last Mr. J. Lynn Thomas, C.B., suggested that the Porthcawl Rest should be utilised all the year round for the treatment of suitable cases of tuberculosis of the joints and spine. Unfortunately, it has not been found practicable to carry out this excellent proposal in its entirety and the committee of management of the rest has decided that as there is no regular medical attendant to the institution only cases of tuberculosis which merely require rest and fresh air can be admitted. The question of erecting a sanatorium is engaging the attention of the branch association and as a scheme has been drawn up to provide a joint institution for the counties of Cardigan, Carmarthen, and Pembroke it was resolved at a meeting held on April 11th to approach the county councils of Glamorgan, Monmouth, Brecon, and Radnor with a view to the provision of a sanatorium for these counties. At the same meeting Dr. J. Howard-Jones (medical officer of health of Newport) pointed out that the highest death-rate from consumption in the kingdom was in Cardiganshire, while Monmouthshire was among the three counties with the lowest death-rate.—The Bristol Health Committee has decided to recommend the corporation to vote a sum of £1000 towards the erection of the sanatorium now being built at Winsley for the counties of Gloucester, Somerset, and Wilts, and also to recommend that £260 shall be paid annually for the exclusive use of four beds for cases from Bristol. The conditions attached to these recommendations are that one of the trustees in whom the sanatorium is to be invested shall be a member of the Bristol Corporation and that four members of the corporation shall be on the executive committee.

Death of Mr. Richard Frederick Nell, M.R.C.S. Eng., L.S.A.

Mr. R. F. Nell, who died on April 9th at the age of 59 years, was one of the oldest and most respected medical practitioners in South Wales. He died at Penarth where he had been practising for more than 30 years. He was the first medical officer of health of Penarth, a position which he held at the time of his death. It is owing to his persistency and sound advice that the town has been put into a thoroughly good sanitary condition. During an outbreak of diphtheria a few years ago, in the absence of an isolation hospital the district council offices were converted into a hospital and the epidemic in time was stamped out. Mr. Nell was medical officer to the Post-office and before coming to reside in Penarth had been connected with the county asylums of Warwickshire and of Gloucestershire.

Health of Bath.

The medical officer of health of Bath (Dr. W. H. Symons), in his annual report for 1901, states that 869 deaths were registered during the year, equal to a death-rate of 17·45 per 1000; of this number 75 were non-residents and excluding these, the corrected death-rate was 15·2 per 1000. 975 births were registered, corresponding to a rate of 19·6 per 1000. 39 deaths occurred from the seven principal zymotic diseases, equal to a zymotic death-rate of 0·78 per 1000. 101 deaths occurred in children under one year of age, giving an infantile mortality of 104 per 1000. The number of deaths from cancer and tuberculosis was 82 and 75 respectively.

Vaccination Desiderata.

At a meeting of the Cardiff Health Committee held on April 8th Dr. E. Walford, medical officer of health, in alluding to vaccination stated that since the passing of the Vaccination Act of 1898 there had been 288 exemption orders granted in Cardiff, equal to 1·8 per cent. of the births during that period. He suggested that the Local Government Board should be urged to advocate in any new Act (1) the transfer to the sanitary authorities of the administration of the Vaccination Acts; (2) the omission of any clause giving exemption for vaccination on the ground of conscientious objection; and (3) the compulsory revaccination of all persons upon reaching a certain age.

Munificent Bequest to Cheltenham Hospital.

The widow of the late Dr. Disney Thorp has bequeathed £5000 to the Cheltenham General Hospital. Dr. Thorp practised in Leeds, where he was a member of the staff of the Leeds Dispensary and lecturer on Forensic Medicine at the Leeds School of Medicine.

Pauper Infectious Cases.

The Cardiff Corporation has agreed to take charge of all infectious cases occurring among paupers in the Cardiff Union at a fixed charge of £450 yearly.

School Closure.

At a meeting of the West of England and South Wales Branch of the Incorporated Society of Medical Officers of Health, held at Newport on April 17th, Dr. J. M. Martin, the medical officer of health of Stroud, opened a discussion upon the question of school closing. The manner in which many schools are closed in country districts is extremely unsatisfactory. Dr. Martin stated as his experience that when the grant to a school was likely to be seriously affected owing to reduced attendance the managers asked for a certificate from the medical officer of health to close the school; and other speakers gave instances of schools having been closed for a week or more before any communication had been sent to the medical officer of health who was then asked to "advise" the closing of the school for a period named to him. The exclusion of individual children from attendance at school, a course which the Local Government Board appears to favour in preference to complete closure in rural districts, bristles with difficulties, for children suffering from measles, whooping-cough, or other non-notifiable diseases are excluded from school by the head teacher who often at the expiration of several months seeks from the medical officer of health a certificate which will enable a school grant to be claimed. The Board of Education might well offer some advice to the managers of public elementary schools as to the closing of their schools and at the same time might issue some more definite instructions than are contained in the code.

Vaccination in Swansea.

One result of the small-pox outbreak in Swansea has been the revaccination of about 10,000 persons. Last year the Swansea Board of Guardians paid in vaccination fees nearly £1000 and it is estimated that that amount will this year be doubled. The board has decided to pay one-half of the cost of lymph used by the public vaccinators.

April 22nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Annual Report of the Medical Officer of Health of the City of Edinburgh.

SIR HENRY D. LITTLEJOHN'S annual report on the health of Edinburgh is, as usual, a minutely detailed and comprehensive document. According to the census taken in the early

part of 1901 the population of Edinburgh numbered 316,837. The birth-rate during the year was 24·99 per 1000, the lowest ever recorded in Edinburgh. The death-rate was 19·41 per 1000, but as 542 deaths were "country deaths"—i.e., related to persons who were merely temporary residents or had come to the city for treatment—the actual death-rate among citizens was 17·76 per 1000. Deaths from zymotic diseases amounted to 599, or 308 more than in 1900, the increase being due to the great prevalence of whooping-cough and measles in the early months of the year. Six cases of small-pox occurred, only one of these proving fatal. The notification of infectious diseases in Edinburgh during 1901 was still carried out under the Edinburgh Municipal and Police Act, 1879, by which notification of only six diseases is required—viz., typhus fever, typhoid fever, diphtheria, scarlet fever, measles, and small-pox. The town council, however, decided to discard the notification clauses of that Act in favour of the Notification of Infectious Diseases Act, 1889, and the latter came into force on Jan. 1st, 1902. The Municipal and Police Act of 1879 was an action on the part of the town council which at first was most strenuously opposed, but which lived down its unpopularity and also served in great measure to influence the Government to adopt similar legislation for the country at large. The total number of notifications received during 1901 was 7053, as against 6160 in 1900, the increase being due to the prevalence of measles and the occurrence of a large number of cases of diphtheria. 14 cases of typhus fever occurred during the year. The number of cases of typhoid fever was lower in 1901 than in any year since compulsory notification was introduced. The six cases of small-pox notified during the year occurred in different parts of the town and were mainly cases of persons who had been infected in Glasgow or in Dundee. In the early part of the year the town council offered free revaccination to the public at various dispensaries throughout the city and allowed general practitioners a fee of 2s. for revaccinations carried out in private practice. Measles, which used to show a marked biennial periodicity, has been present in epidemic form during the last three years. During 1901 2440 patients were treated in the City Hospital, as against 2499 in the previous year. The average daily number of patients in the hospital was 220.

Edinburgh Town Council and the Notification of Measles.

According to the arrangement made by the Edinburgh Town Council in the beginning of the present year, by which the Notification of Infectious Diseases Act, 1889, was adopted in place of the Edinburgh Municipal Act, 1879, measles is no longer included among the notifiable diseases. This has not altogether met with approval from the profession in Edinburgh and at a meeting of the town council on March 25th Dr. Matheson Cullen moved that the magistrates and council, as local authority, should consider the subject of passing a resolution that the Notification of Infectious Diseases Act, 1889, should apply to measles, but only in respect of the first case of that disease occurring in each family or house during the month. Dr. Cullen spoke at some length on the subject, and his motion was seconded by Mr. Geddes who stated that the School Board was also in favour of the notification of measles. Mr. Lang Todd, in opposing the motion, said that he regretted to have to differ from Dr. Cullen, mainly on the ground of expediency and expense. The difficulty as to measles was that cases of measles were infectious before notification could be made. The motion was defeated by 27 votes to seven.

April 22nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Surgeons in Ireland: Election of Examiners.

NOTICE has been given that a meeting of Fellows will be held on Tuesday, May 6th, at 4.30 P.M., pursuant to the provisions of the supplemental charter, to witness the election of the examiners for the curriculum of diploma. Candidates are requested to lodge their applications with the Registrar, at the College, on or before Tuesday, April 29th, at 10 A.M. Graduates of any university which from time to time may be recognised by the College are eligible for election as examiners in the subjects of general education. All the other examiners must be Fellows or Licentiates of the College.

The Annual Dinner of the Royal College of Surgeons in Ireland.

This dinner will be held at the College on Saturday, May 10th, at 7.45 P.M. Fellows desirous of being present at the dinner should send their names and those of any guests they may wish to invite to Mr. G. F. Blake, Registrar, Royal College of Surgeons in Ireland (to whom cheques are payable), before May 1st. The formal presentation of the Honorary Fellowship of the College to Surgeon-Captain Thomas Joseph Crean, V.C., will take place at 7.30. His Excellency the Lord Lieutenant, K.G., has graciously accepted the invitation of the President of the College to be present.

Deaths from Gas-poisoning.

A fatality caused by gas-poisoning was recently the subject of an investigation and inquest in Dublin. A man named O'Neill, aged 38 years, his wife, aged 26 years, and their son, aged five years, were discovered dead after two days in a cottage on the South Circular-road, the rooms in which they were found being still filled with gas which was escaping from the service pipe. Dr. H. C. Earl, gave evidence as to the cause of death and the jury found that the deceased had died from carbon monoxide poisoning. It will be remembered that a change in the composition of the illuminating gas supplied by the company which has a monopoly of the gas lighting in Dublin was made more than a year ago, when 20 per cent. of water-gas was added to the article previously furnished. It was pointed out at the time that this addition was a serious matter, inasmuch as it raised the percentage of the really poisonous ingredient of the gas. Professor A. Roche, lecturer on Public Health at the Catholic University Medical School, has addressed a letter to the editor of the *Irish Times* in which he complains of the action of the Public Health Committee in giving its consent to this alteration in the composition of the gas-supply. He points out that four deaths have taken place from gas-poisoning within the last few months in Dublin where accidents from this cause were previously almost unknown; moreover, that in Belfast during the first year in which water gas was introduced there were no less than 11 post-mortem examinations in connexion with it at the Royal Hospital, where not a single case of gas-poisoning had been received for years before.

Primary Education in Ireland.

Dr. W. A. McKeown, who has done so much to draw attention to the university question in Ireland, is now turning his mind to primary education, and in the public press he has pointed out how insanitary the national schools in Ireland are. In reference to the district of Newtownards, co. Down, he quotes as follows from the report of one of the national board school inspectors, dated January, 1900:—"After what has been said as to the character of many of the houses and premises, it is not to be wondered at if sickness prevails to a large extent and epidemics spread rapidly. The usual childish ailments of course recur and gastric diseases, moreover, are extremely common. The Ballymacarrett district is low-lying and not an easy place to drain thoroughly, but the school-houses no doubt help the work of disease. I can count up 14 monitors who have retired through ill-health and have, I imagine, all since died. Two young monitresses employed in an overcrowded school have died within little more than a year." Dr. McKeown points out the necessity of having good, properly constructed schools and this leads him to point out the importance of having good teachers with adequate training and he enforces the necessity of offering such inducements (financial and otherwise) as will attract capable persons to the teaching profession. In contrasting the state of affairs in Ireland and in Scotland Dr. McKeown points out how much inferior primary education is in the former country and he mentions the reasons.

The Senate of the Royal University of Ireland.

On May 9th Convocation of the Royal University of Ireland is to elect six members as representatives on the Senate in the place of the following who have retired at the end of their period of office but who are eligible and who offer themselves for re-election: Dr. J. Walton Browne (Belfast), Mr. Edward Cuming, M.A. (Dublin), Rev. Mathew Leitch, D.Lit. (Belfast), Judge Shaw, LL.D. (Dublin), Professor T. Sinclair (Belfast), and Sir William Thompson, C.B. (Dublin). There is to be a contest, as Dr. Jeremiah Cotter of Cork has come forward as a candidate and already considerable election literature is being circulated.

The Royal Commission on Irish University Education.

The Commissioners on Irish University Education assembled at the Cork Queen's College for the purpose of taking evidence. All the Commissioners, with the exception of three, were present. Professor Butcher was unavoidably absent owing to the death of his wife. In anticipation of the arrival of the Commissioners the Cork Town Council and the Cork County Council unanimously passed resolutions in favour of the founding of a Cork University. The Cork Medical and Surgical Society and the council of the Cork Chamber of Commerce and Shipping also passed resolutions urging that Cork should be a university centre. It is understood that more than one witness forcibly directed the attention of the Commissioners to the damage done to the Cork Queen's College by the system of appointing examiners adopted by the Senate of the Royal University. For years Cork has been represented by only four medical examiners, whilst teachers connected with Dublin schools examine in practically all the subjects of the medical curriculum. Students are thus induced to go to Dublin in order that they may have opportunities of becoming conversant with the individual views of the examiners. Such things have tended seriously to handicap educational institutions in the South of Ireland and hence one of the reasons for the popular demand that a Cork University should be founded. Two witnesses who are anxious for the furtherance of technical education suggested when giving evidence before the Commission in Dublin that the Cork Queen's College should be converted into a medical school and a technical college, but it is believed that the Commissioners, now that they have visited the Cork College, will not approve of the suggestion. Indeed, a very strong opinion prevails that if the Government would deal radically with university education in Ireland a Cork University should be established, or, at the very least, that the Queen's College should be made an autonomous institution with power to appoint nearly all of its own examiners in the faculties of arts, law, medicine, and engineering, so that one of the principal functions of the parent university would be to confer degrees in these subjects.

April 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Legal Decision arising out of a Professional Visit.

THE courts at Riom have just given judgment in a case which is of great importance to medical men who may be asked by their own patients to visit another patient. Such an occasion often arises when an accident happens and sometimes also in the case of an affray. In the case under review the facts were as follows. A woman belonging to the department of Allier was beaten by her neighbours. Fearing the consequences of their act and dreading that a prosecution for assault would follow they despatched a medical man, Dr. X, to report on the condition of the injured woman. Although Dr. X knew quite well that the patient's own medical man was in constant attendance he went on his mission without having any legal authority to do so, without being asked to come by the medical man in attendance, and without even letting the latter know of his intention. On arriving at the house he found the patient in bed, whereupon he pulled down the clothes and made a very complete examination. Although he was aware that the woman was married he said nothing to the husband who was at work not far away. Moreover, although he knew that the results of his examination should have been kept a professional secret he embodied them in a certificate which he handed to the neighbours who had assaulted the woman, knowing full well that they intended to publish the information given to them. The woman brought an action both against those who had assaulted her and against the medical man for examining her against her will and for using violence towards her. The court found the neighbours guilty but the medical man not guilty. The court found that no physical violence had been used, for if the woman had really opposed the examination it could not have been made. They considered, however, that moral violence had been used, and although they inflicted no penalty, yet they held that the proceedings were absolutely unjustifiable from a professional point of view.

The Sixth French Congress of Medicine.

The sixth French Congress of Medicine commenced at Toulouse on April 1st. Dr. Lemoine of Lille, the president, gave an address on the Results of the Great Development in the Use of Instruments for Diagnosis and in Medical Technique which had taken place in the Nineteenth Century. The address was much appreciated, for few sciences have benefited more by the improvements in instruments and in technique than has medicine. But after referring to the great benefits which accrued from the use of auscultation, percussion, the clinical thermometer, the microscope, medical electricity, radiography, photography, serum therapeutics, and the like, Dr. Lemoine asked whether the tendency of all these methods of diagnosis had not rather tended to make the modern physician less of a real observer than his forefathers and to cause him to depend more upon technical skill than upon clinical observation. He concluded his address by saying that a serious course of classical studies should still be considered as a necessary preliminary to the study of medicine, although at the present day the current seemed to be setting in favour of simplifying these preliminary studies. Among the more important papers read was one by M. Charrin on Hepatic Insufficiency, one by M. d'Espine on Convulsions in Children, one by M. Soulier on Drugs which lessen Tissue Change (*médicaments d'épargne*), one by M. Leredde on the Nature and Treatment of Syphilitic Modifications of Disease, one by M. Arnozan on Abcès de Fixation,[1] and one by M. Picot on Hepatic Insufficiency without Jaundice in Pneumonia. Although the papers and the discussions were of great interest, yet the attendance at the Congress was very small. It was hoped that a national annual Congress of Medicine would bring about scientific decentralisation and that is the reason for holding it in a different provincial town every year. Moreover, this was done at the request of provincial practitioners and professors who complained that Paris was the centre of all the scientific meetings. The provincial practitioners, however, seem most unwilling to move away from their homes and the attendance at the provincial meetings of the Congress is confined to the medical men of the town where it is held and a few Paris practitioners. If more interest is not shown in future in the proceedings of the Congress it will no longer be held in the provinces but solely in Paris as is the fellow Congress on Surgery.

The Winding-sheet of Christ.

M. Vignon read a most interesting paper at the last meeting of the Academy of Sciences and exhibited some photographs which he had taken of the winding-sheet preserved at Turin and traditionally said to be that of Christ. This winding-sheet has on it certain markings printed in a brown colour which when photographed give a white imprint, as does a negative when printed from. These markings, therefore, act as a true negative and M. Vignon has shown by certain very careful experiments that cloth impregnated with oil and aloes, as was the winding-sheet in question, will receive an impression when in contact with ammoniacal vapours such as would be given off from a sweat very rich in urea, as is the case in the sweat of a person dying a lingering and painful death. Any idea of fraud need not be considered, for no one has touched this winding-sheet since 1353, and no painter at that date had the skill to reproduce such an exact drawing. The impression of the head is excellent. The wounds produced by the crown of thorns and the marks of the blood drops are quite obvious. The wound in the side and even the marks of the stripes produced on the back by the flagellation are also quite evident. Each of these stripes has at its end an enlargement such as would be produced by a cord with a ball of lead at the end. It is well known that this form of scourge was employed by the Roman soldiers and such a one has been found at Pompeii. Finally, the marks of the nails in the arms are not in the palm of the hand but show that the nails were driven through at the level of the wrist. M. Vignon's paper has created an extreme interest both in the scientific and the religious world.

April 22nd.

[1] An "abcès de fixation" is one produced by the method of Fochie of Lyons by the injection under the skin of some irritant substance as, for instance, spirit of turpentine. The method is used in cases of generalised infectious disease, several abscesses being produced in various parts of the body. In the pus of these abscesses, which is at first quite aseptic, the microbes of the general infection appear to collect and in certain cases the opening of the abscess has apparently brought about the restoration to health of the patient.—ED. L.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Sanatoriums for Tuberculous Patients.

THE German central committee for the establishment of sanatoriums for tuberculous patients held its annual meeting recently. The Empress was present, Count Posadowski, one of the Secretaries of State, was in the chair, and the committee's report was read by Dr. Pannwitz. There are now 100 sanatoriums for tuberculous patients in Germany, most of them in the west and south, where the chief industrial centres are situated. In order to secure a proper selection of cases for sanatoriums the committee has provided dispensaries in several places and has induced some of the general hospitals to establish special wards for phthisical patients. The Erholungsstätten situated in the neighbourhood of some of the larger towns have proved a great success. The patients who attend these institutions are there only during the day, benefiting by the fresh air and the good food and returning to their own homes for the night. The next step of the committee will be the establishment of sanatoriums for phthisical children. Herr Künzer, the mayor of Posen, suggested that farms might be established where convalescents discharged from the sanatoriums might stay for a time and might be employed in the fields or gardens so that they would not only get into the habit of working as formerly but would make a longer stay in the pure air of the country. Professor Fränkel of Berlin said that sanatorium treatment was preferable to living at a farm. The amount of agricultural work to be done by convalescents from tuberculosis would have to be regulated by a medical man. Dr. Liebrecht of Hanover informed the committee that one of the Hanoverian local authorities had leased a farm with about 300 acres of land where 50 patients would soon be employed in the cultivation of vegetables. They would be paid wages and would have free board and lodging; their daily amount of work would be subject to the approval of a resident medical officer, the maximum being eight hours. Another subject of discussion related to the nursing staff of the sanatoriums. Dr. Schaper strongly recommended the formation of a corps of nurses specially trained for sanatorium work; assistance in duties requiring no special knowledge might be given to them by former patients who might be allowed to remain under this condition in the sanatoriums. Pending the formation of a special sanatorium corps the duties might be entrusted to nurses belonging to the Red Cross Society or to religious societies. It was important that the nurses should have a good training and should be competent to advise patients as to general hygiene and the precautions which they would have to observe at home after their discharge from the sanatorium. In conclusion, Professor Rubner read a paper on the Measures to be taken for Smoke Abatement and for the Prevention of Injury to Health by Dust and Deleterious Gases. The meeting was attended by representatives from every part of Germany. Dr. Serfiron of Paris was present on behalf of the French Association for the Prevention of Tuberculosis.

Death of Professor Buchner.

Professor Hans Buchner, the successor to the late Professor von Pettenkofer in the chair of hygiene at Munich University, died in Munich on March 30th. Professor Buchner was one of the early bacteriologists of Germany. Immediately after the completion of his university curriculum he assisted the late Dr. Nägeli, the professor of botany, in his researches on bacteria and their relation to infectious diseases and as long ago as 1877 he published his first work on Nägeli's theory. He subsequently made valuable observations on the alteration of the virulence of the anthrax bacillus, on the antitoxic action of the blood-serum, on alexins, and on various other subjects. Professor Buchner, who was born in 1850, has been removed by death at a relatively early age. His life was spent in Munich, where he was recognised as *privat-docent* in 1880. In 1892 he was promoted to be extraordinary professor and in 1894 to be ordinary professor in succession to Professor Pettenkofer whom he has survived by only a few months.

An Early Symptom of Pleurisy.

In the *Centralblatt für Chirurgie* Dr. B. Przewalski of Charkow (Russia) directs attention to an early symptom of pleurisy with effusion. He detected this symptom in 19 cases, 14 of which had a sero-fibrinous and five a suppurative effusion. In every instance the intercostal spaces became more narrow and the intercostal muscles more rigid on the affected side than on the healthy side. These symptoms were due to an abnormal contraction of the interosseous muscles and were analogous to the muscular contraction met with in affections of the joints. This symptom was especially marked in children.

Health of Professor Virchow.

Professor Virchow has left Berlin for the country. He applied for leave of absence till the month of June, but the Minister of Public Instruction granted him leave for the whole summer. Professor Virchow will eventually proceed to Teplitz in Bohemia for the sake of the hot baths there. His lectures and courses of instruction will be delivered by his assistants who will also act as examiners at the State examination in medicine.

April 21st.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Diseases in the Philippines.

Major and Surgeon L. M. Mans, United States Army, Commissioner of Public Health in Manila, has recently forwarded a report of the diseases which occur in those islands both among cattle and men. He says that bubonic plague was first discovered in Manila in December, 1899, and since that date up to the present time 778 cases have occurred, resulting in 618 deaths or 79·4 per cent. But five cases of death have occurred from small-pox in Manila during the last fiscal year and it is believed that the city may be regarded as free from that disease. Pulmonary tuberculosis is found to be very common among a certain class of the inhabitants of Manila, while scarlet fever and diphtheria are very rare, but measles is occasionally reported. Major Mans believes that the number of lepers living in the Archipelago to be somewhat less than 12,000, although estimates of the leper population have varied from 10,000 to 30,000. The most interesting part of Major Mans's report is that which refers to the presence of rinderpest and the locust plague, the former of which he says has been prevalent among the Carabao and cattle of the Philippine Islands for a number of years, and as a result a large number of these animals has been destroyed. The Board of Health has taken the matter up and has sent experts into a number of the provinces for the purpose of teaching intelligent natives the method of making post-mortem examinations on animals dying from the disease, collecting gall, and inoculating animals suffering from the disease or for their immunization by serum. The most marked beneficial results have been obtained by these methods and it is believed that in time the disease will be eradicated from the Archipelago. The locust pest has likewise infested the Archipelago for a number of years, in certain instances destroying the crops in a number of provinces and islands and resulting in a great deal of suffering among the inhabitants. Fungus for the destruction of locusts has been introduced in a large number of the provinces, resulting in some instances in the destruction of the swarms. In certain localities reports have been received that drinking water infected by dead locusts poisoned by the fungus caused intestinal disturbances among the natives. Letters have been written to the Secretary of Agriculture, Washington, D.C., and the Board of Health, Natal, for specimens of the fungus used in those countries for the destruction of locusts.

Disinfecting Schoolbooks in the State of New Jersey.

In September, 1900, an experimental cabinet was constructed under the direction of the Board of Health of the State of new Jersey, and described in its annual report, for disinfecting the books, kindergarten materials and utensils used by the pupils in the public schools. The cabinet is made of wood, with a tightly-fitting door, has a cubical contents of 24 cubic feet, and is provided with drawers having wire bottoms. Tests extending over several weeks showed that germicidal effects could be obtained by disengaging in the cabinet the formaldehyde contained in 60 cubic centimetres of a 40 per cent. solution of the gas. Books were treated by placing them upright, widely opened, upon the wire cloth bottom of the drawers and the formalin was poured into a shallow tray over which was suspended numerous strips of wicking, the lower ends of the wicking dangling in the solution. After the pupils had been dismissed for the day the cabinet was loaded with the articles

to be disinfected, and when the formalin had been poured into the tray the door was closed and firmly clamped. Upon removing the articles from the cabinet and distributing them for use the following morning the odour of the gas was found to adhere strongly to the woollen balls, but it was not perceptibly carried by books, pencils, and other articles having smooth surfaces. No growth occurred in test cultures placed between the leaves of books and under the loose folds of paper. Control cultures were used in each case and growth was uniformly observed.

The Type of Small-pox in the East and the West of the United States.

Dr. Brayton of Indianapolis, Indiana, has recently discussed in an interesting paper the different types of small-pox observed by him in the Eastern and the Western parts of the United States. The symptoms of the disease as observed in the west are not only different but are of a milder character than those met with in the east, simulating *grippe* or some kindred malady. The etiology, too, of the epidemic in Indiana differs somewhat from that in the Eastern States, not only in the symptomatology and clinical history of the patient but in the prognosis of the disease as well. The type of disease occurring in New York compared with that which had prevailed in the west was much more serious and graver in every way. The initial symptoms, the complications, particularly the eye and nervous symptoms, together with the resultant abscesses, more nearly approached the classic symptoms of the disease, especially its fatality, there being a mortality of about 13 per cent. in New York as compared with an insignificant ratio in the west. Dr. Brayton says that various theories have been advanced to account for these phenomena, one of the most plausible being that the milder type so prevalent in the west is an attenuated type of the disease—a tale-end of a much severer epidemic which had already run its course and spent its fury in the far south, notably in Mexico and the West Indies. At the latter place it infected American troops and on their return was scattered broadcast. On the other hand, the epidemic in New York was a completely fresh outbreak, the disease being imported in virulent form among a population which had been entirely free from the disease for a considerable period.

The Low Birth-rate among the United States Population of Native Stock.

The decreasing birth-rate of native-born Americans has for some time been arousing attention not unmixed with alarm among the thinking men of the nation. The Michigan Monthly Bulletin of Vital Statistics, alluding to this undoubted fact, after remarking that there has been no recent and sudden decline in the birth-rate, but that it has been going on for 30 or 40 years, with fluctuations, usually periodic, goes on to say, "But after making these allowances we must say that students and friends of American family life may well give serious attention to the evidently lessening size of the American family that has been going on for several generations on American soil. If French patriotism is concerned for its low birth-rate a half century or so too late we may do well to consider our own tendencies before recovery is practically impossible or extremely difficult." So far as the statistics go the situation is beginning to be a grave one. A serious feature with us is that the fewest children are often, if not generally, found in families apparently the best able in a general way to care for them, leaving the less fit to make the larger contributions to the succeeding generations. It is alleged too, that sterility among American women is increasing from various causes.

April 14th.

ROYAL MICROSCOPICAL SOCIETY.—An interesting series of objects illustrative of pond life arranged by the Fellows of the Royal Microscopical Society and the members of the Quekett Microscopical Club was on view at the meeting of the Royal Microscopical Society held on April 16th. The specimens, of which some were alive and some were mounted, were of course shown under low powers, some of them by polarised light. Messrs. R. and J. Beck showed a series of bands ruled by Mr. H. J. Grayson of Melbourne University, containing 50,000, 55,000, and 60,000 lines per inch. Under a $\frac{1}{12}$ oil immersion lens the execution of these lines was seen to be very fine. It was stated that Mr. Grayson has ruled bands containing 120,000 lines per inch.

Obituary.

THOMAS MORE MADDEN, M.D. (HON. CAUSÂ) TEXAS MED. COLL., M.R.C.P. IREL., F.R.C.S. EDIN., M.R.C.S. ENG., M.A.O. (HON. CAUSÂ) R.U.I.

VERY sincere regret was felt in Dublin at the announcement of the death of Dr. More Madden which took place after a lingering illness at his country residence, Tinode, co. Wicklow, on April 16th.

Dr. More Madden was for a long term of years one of the most prominent members of the medical profession in Ireland and an extensive contributor to the literature of medicine there and elsewhere. He was the son of the late Dr. Richard Madden, the well-known author of the "Lives of the United Irishmen" and of other important historical works, and was born just 64 years ago in the island of Cuba, where his distinguished father filled at the time the office of British representative at Havana in the International Congress for the Abolition of the Slave Trade. The elder Dr. Madden was then a prominent member of the anti-slavery party.

Dr. More Madden commenced his medical studies as apprentice to the late Mr. Cusack, surgeon-in-ordinary to the Queen in Ireland, but was soon obliged by bad health to go to the south of Europe, where, however, he continued his professional education at Malaga and at the University of Montpellier. Returning to this country in 1862 he became a Member of the Royal College of Surgeons of England, a Member of the Royal College of Physicians of Ireland, and a Fellow of the Royal College of Surgeons of Edinburgh. Finally, in 1868, adopting the practice of gynæcology and obstetrics, he settled in Dublin and was appointed assistant physician to the Rotunda Lying-in Hospital. After three years, during which he most creditably carried out the duties of that office, he was elected obstetrical physician to the Mater Misericordiæ Hospital—a position which he filled until his death. He received the degree of M.D. (*hon. causâ*) of the Texas Medical College in 1890, while the Senate of the Royal University of Ireland in 1896 conferred on him the degree of M.A.O. (*hon. causâ*) as a recognition of his services as an examiner at their College and under the conjoint scheme of the Royal College of Surgeons in Ireland and the Apothecaries' Hall of Ireland. Dr. More Madden filled many positions of honour in connexion with his branch of medicine. He was a vice-president of the British Gynæcological Society, president of the Obstetrical Section of the British Medical Association, honorary president of the International Congress of Gynæcologists, Brussels, 1892, Fellow of the Obstetrical Society of Edinburgh, a corresponding member of the Gynæcological Society of Boston, and an examiner in midwifery and diseases of women at the Queen's University of Ireland. He was also consulting physician to the Children's Hospital, Temple-street, and consultant to the National Maternity Hospital, of which he was formerly master. As regards his communications to medical literature they were numerous. Suffice it to mention his "Clinical Gynæcology, a Handbook of Diseases of Women," "History of the Dublin Lying-in Hospital," "Manual of Obstetrical and Gynæcological Nursing," "Treatment of Sterility," "Mental and Nervous Disorders Peculiar to Women," "Child Culture, Moral and Physical," with many articles, including "Diseases of Pregnancy," &c., which appeared in Quain's "Dictionary of Medicine," and papers which were published in THE LANCET and other medical journals. Of all his works his "Health Resorts" and "The Spas of Europe"—both the outcome of his search for health—have had the widest popularity.

Dr. Madden inherited in no small degree the literary tastes of his father, and some of his writings are well known outside the ranks of his profession. He was a member of the Royal Irish Academy and he contributed articles of antiquarian interest on the history of medicine in Ireland to lay as well as to medical journals. A series of papers appeared recently from his pen dealing with the origin and history of the castles and abbeys of that portion of the country through which the river Shannon flows. The last of his more important books was the new edition of his father's important historical work "The Lives of the United Irishmen." That was to him a labour of love, though he never interested himself in contemporary politics.

Dr. Madden died at a comparatively early age. He belonged to an old-fashioned, highly cultured class of

physicians and whether owing to birth, training, or private circumstances, he never really cared to make the practice of his profession, to any large extent, a means of earning money. On the other hand, he took a deep interest in many of the philanthropic institutions of the city of Dublin to which his demise will prove a severe loss. Formerly a regular attendant at medical societies he took a strong part and displayed freely all the courage of his convictions, making thereby, as all such men do, enemies as well as friends. Of late he has been chiefly known as a physician to the Mater Misericordiæ Hospital and to the Children's Hospital, Temple-street. At those institutions he was highly valued and held in affectionate esteem by his colleagues, by the Sisterhoods, and by the students with whom he was always deservedly popular. They, indeed, showed their appreciation of him and of his teaching by attending in great numbers his funeral.

Dr. More Madden's personality will long be missed from medical circles in Dublin. His place as country gentleman and landowner—he was a justice of the peace for the counties of Kildare and Carlow—will be filled by his eldest son, Captain McDonnell Madden, now of Tinode, county Wicklow.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in April the following candidates passed in the subjects indicated :—

Surgery.—W. Ball (Section I.), Westminster Hospital; B. M. Dunstan (Section I.), St. Thomas's Hospital; J. W. Elliott (Section II.), St. Mary's Hospital; A. P. Hoabi (Sections I. and II.), Cambridge; A. Holroyde, Leeds; E. A. Houchin, Middlesex Hospital; W. St. A. F. Hubbard (Section II.), Charing-cross Hospital; G. R. Lucas, Edinburgh and Charing-cross Hospital; S. A. Rowley, Bristol; T. Scatchard (Section I.), Leeds; P. Southan (Sections I. and II.), Westminster Hospital; and J. A. W. Webster (Section I.), St. Mary's Hospital.

Medicine.—A. H. Bell, Cork and Guy's Hospital; G. F. G. De Laubenque, Middlesex Hospital; A. Holroyde, Leeds; E. A. Houchin, Middlesex Hospital; T. G. Miles (Sections I. and II.), Guy's Hospital; O. Millauro (Section II.), Westminster Hospital; G. Roper, Cambridge; C. J. Taylor (Sections I. and II.), Bristol; and H. C. S. Woodward, St. Thomas's Hospital.

Forensic Medicine.—G. F. G. De Laubenque, Middlesex Hospital; A. Holroyde and T. Scatchard, Leeds; C. S. Scott, St. Bartholomew's Hospital; C. J. Taylor, Bristol; and W. H. Tomlinson, Manchester.

Midwifery.—G. R. Hannon, King's College Hospital; E. A. Houchin, Middlesex Hospital; W. St. A. F. Hubbard, Charing-cross Hospital; A. H. Hughes, Bristol; P. C. W. Laws, St. George's Hospital; C. H. Osmond, Glasgow; and A. L. Walters, St. Thomas's Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery :—A. H. Bell, A. Holroyde, W. St. A. F. Hubbard, G. R. Lucas, and P. Southan.

UNIVERSITY OF BIRMINGHAM.—At examinations for the degree of Bachelor of Medicine and Bachelor of Surgery the following candidates were successful :—

First examination.—Class I.: Herbert Charles Horace Bracey. Class II.: John Staines Austin, Henry Neville Crowe, Lionel Chattock Hayes, Richard Stuart Wathen Hunt, George Frederick Jotham, Walter Rowland Southall Roberts, Spencer Graham Walker, and Edmund Stanley Whitcombe.

Second examination.—Class II.: Fred Thomas Holloway Davies, Fred Newton Walsh, and Herbert Henry Warren.

N.B.—The foregoing list, published for the convenience of candidates, is provisional only and is not final until the report of the examiners shall have been confirmed by the Senate.

UNIVERSITY OF DURHAM.—At the examinations for the degree of Bachelor in Medicine held in April the following candidates have satisfied the examiners :—

FIRST EXAMINATION.

1. *Elementary Anatomy and Biology, Chemistry, and Physics.*—*First-class Honours:* Wilfrid Fairclough, College of Medicine, Newcastle-on-Tyne. *Second-class Honours:* Oswin Shields, M.R.C.S., L.R.C.P., St. Mary's Hospital. *Pass List:* Orrock Arnott, Frederick Robert Henry Laverick, and Robert Joseph Weidner, College of Medicine, Newcastle-on-Tyne.
2. *Elementary Anatomy and Biology.*—Vincent Edgar Badcock, George Edward Peckett Davis, William Denham, Henry Denham, George Denholm, and Neville Avory Eddlestone, College of Medicine, Newcastle-on-Tyne; Archibald Finlay, London Hospital; Arthur Cecil Hays McCullagh, Geoffrey Pybus, William Rollin, Richard Woodward Swayne, Lionel Langford Westrope, James Burrell Williamson, and Thomas Leathard Wormald, College of Medicine, Newcastle-on-Tyne; and Frank Whitby, St. Bartholomew's Hospital.
3. *Chemistry and Physics.*—Helen Young Campbell, London School of Medicine for Women; Hamilton Drummond, College of Medicine, Newcastle-on-Tyne; Camilla Lucy Heckrath, London School of Medicine for Women; Florence Barrie Lambert, Edinburgh Medical School; Arthur Alan Miller, M.R.C.S., L.R.C.P., Guy's Hospital; Jessie Margaret Murray, London School of Medicine for Women; Samuel Leslie McBean, College of Medicine, Newcastle-on-Tyne; and George Herbert Spencer, M.R.C.S., L.R.C.P., London Hospital.
4. *Elementary Anatomy.*—Lillie Johnson, B.Sc., and John Cuthbert Pearce, A.Sc., College of Medicine, Newcastle-on-Tyne.

SECOND EXAMINATION.

Anatomy, Physiology, and Materia Medica.—Second-class Honours: Olga Schiele, London School of Medicine for Women; Ernest Young, St. Mary's Hospital; and Reginald Inglis Douglas, St. Bartholomew's Hospital. *Pass List:* Reginald Bigg, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; George Nixon Biggs, St. Thomas's Hospital; Dudley Thomas Birt, William Henry Hugh Croudace, John Galloway, and Joseph Henry Lewars, College of Medicine, Newcastle-on-Tyne; Herbert Lovis Noel-Cox, St. Thomas's Hospital; and Robert Blackett Reed, Andrew Banks Raffle, and Robert Joseph Willan, College of Medicine, Newcastle-on-Tyne.

DONATIONS AND BEQUESTS.—By the will of Sir Thomas Lucas £250 have been bequeathed to the Lowestoft Convalescent Home and £250 to the Lowestoft Hospital.

PLAGUE IN A ZOOLOGICAL GARDEN.—A Reuter's telegram of April 21st from Sydney states that further cases of plague have occurred there and that the disease has appeared among the wallabies at the Zoological Gardens which, in consequence, have been closed to the public.

TWO NOVEL PATENTS.—A German inventor has patented a small instrument intended to facilitate the swallowing of pills. An American has patented an "individual communion-service," consisting apparently of a circular tray with 36 glass cups. Engravings and descriptions of each of these objects will be found in the *Official Gazette* of the United States Patent Office, issued on April 8th, 1902.

THE annual dinner of the staff and members of the Volunteer Ambulance School of Instruction will take place at the Trocadero Restaurant, Shaftesbury-avenue, London, W., at 7.45 P.M., on Wednesday, May 7th; the senior medical officer, Brigade Surgeon-Lieutenant-Colonel P. B. Giles, V.D., will occupy the chair. Tickets may be obtained from Surgeon-Captain E. M. Callender, 40, Connaught-square, Hyde Park, W.

ESSEX AND COLCHESTER GENERAL HOSPITAL.—The eighty-second annual report of the Essex and Colchester General Hospital has just been issued and it shows that much good work has been done by this institution. More patients have been treated than in past years and the number of accident and emergency cases has shown an increase over previous years. The number of in-patients admitted during 1901 was 716, the number of out-patients was 2180, and the number of cases of accident or emergency (admitted as in-patients) was 158. The total amount of expenditure under all heads has been £3442 14*s.* 1*d.*, against a total of receipts (exclusive of legacies) amounting to £3164 2*s.* 8*d.*, leaving a deficit on the year of £278 11*s.* 5*d.*; the adverse balance of last year—namely, £443 7*s.* 8*d.*—being added to this makes a total debt against the hospital on Dec. 31st, 1901, of £721 19*s.* 1*d.*

QUEEN'S COLLEGE, BELFAST.—At the class examinations held in the above College at the close of the medical winter session the following prizes were awarded :—Zoology: senior, Albert Victor M'Master; and junior, Charles Graham Knight, James Gaston, and Charles Robert Harvey. Chemistry: Charles Robert Harvey, Charles Graham Knight, and James Gaston. Practical Chemistry: senior, Robert Chambers, LL.B.; and junior, Alexander William Connolly, James Stuart Dickey, and Charles Dowall Bell. Anatomy: senior, John Stevenson O'Neill, William James Wilson, Malcolm Orr Wilson, and William Henry Davis; and junior, Robert Jamison, Robert Chambers, LL.B., and Jemima Blair White. Practical Anatomy: senior, Malcolm Orr Wilson, William Joseph M'Learn Baird, and Robert Johnston; second year, William James Leighton, John Stevenson O'Neill; and first year, Charles Dowall Bell, Charles Hope Waddell, Robert Jamison and James Stuart Dickey (equal), and Thomas James Simpson Moffett. Physiology and Histology: senior, William James Wilson; and junior, James Stuart Dickey, Robert Jamison, and Robert Chambers, LL.B. Practical Histology: James Stuart Dickey, Gerald Hoey Stevenson, Samuel M'Murray, and Charles Dowall Bell. Materia Medica: Malcolm Orr Wilson, John Alexander Boyd, and Robert Hunter M'Giffin (equal). Medicine: Henry Hanna, M.A., B.Sc., and Charles Gibson Lowry. Midwifery, Gynæcology, and Diseases of Children: John M'Clatchey, B.A., Mary Evelyn Simms (equal), Thomas Killen, B.A., and John

Witherow Pitt. Surgery: John M'Clatchey, B.A., Samuel Kirkpatrick Adams, and James M'Alister Holmes. Ophthalmology and Otology: Samuel Kirkpatrick Adams and John M'Clatchey, B.A. Sanitary Science: John M'Clatchey, B.A.

VACCINATION GRANT.—Mr. F. Hone Moore, L.R.C.P. & S. Irel., medical officer and public vaccinator of the Sibsey District, Boston, Lincolnshire, has been awarded the Local Government Board grant for successful vaccination this year.

LITERARY INTELLIGENCE.—It is announced that the first of the new volumes of the Encyclopædia Britannica will be published jointly by Messrs. A. and C. Black and the *Times* and will appear within a few weeks. The editors-in-chief are Sir Donald Mackenzie Wallace, President Hadley of Yale University, and Mr. Hugh Chisholm. The contents will include more than 10,000 articles by more than 1000 contributors, 150 full-page plates, 125 coloured maps, and 2300 other illustrations, making 11 volumes in all, which will be published at intervals approximately of about a month. The departmental editor for medical science is Dr. D. Noel Paton. The list of contributors contains the names of Sir Michael Foster, Sir T. Lauder Brunton, Mr. Edmund Owen, the late Sir William Mac Cormac, Sir Henry Thompson, Professor T. C. Allbutt, and Professor G. Sims Woodhead.

VACCINATION EXPENDITURE.—At the meeting of the Bideford Board of Guardians held on April 1st it was reported that the fees of the public vaccinators of the union for the past three months amounted to £79 as compared with £32 for the corresponding quarter of 1901. The chairman said that if so many people in a good position were revaccinated by the public vaccinators next quarter as had been the case during the past three months they would have to publish their names.—At the meeting of the Newton Abbot Board of Guardians held on April 2nd it was reported that the vaccination fees for the past three months amounted to £226 as against £60 in the corresponding quarter of 1901. There had been 304 re-vaccinations.—At the meeting of the Warminster Board of Guardians held on April 8th it was reported that the vaccination fees for 1901 were £153 higher than in the previous year.—At the meeting of the Penzance Board of Guardians held on April 10th it was stated that the vaccination fees for the past quarter amounted to over £176, being considerably in excess of the corresponding quarter for 1901. One of the guardians asked to be furnished with the names of those people who had been revaccinated at the expense of the rates, whereupon another of the guardians, Mr. R. D. Boase, M.R.C.S. Eng., remarked that his name might head the list and the clerk of the guardians added that he too had been revaccinated by the public vaccinator. The matter then dropped.

Parliamentary Intelligence.

HOUSE OF COMMONS.

FRIDAY, APRIL 18TH.

The Atmosphere of the House.

DR. FARQUHARSON asked the First Commissioner of Works whether he could inform the House of the result of the recent examination of its air and whether he would apply the same scientific test to the atmosphere of other public buildings such as the Central Criminal Court and the British Museum Library.—MR. AKERS-DOUGLAS replied: The tests of the air in this chamber show a very good result as regards the amount of carbonic acid which was only 5·2 volumes in 10,000, very little in excess of the quantity usually met with in the air of cities and far less than what is generally present in places of assembly. The bacteriological test revealed an undue number of micro-organisms, but none of them were found to be disease-producing. The full reports of Dr. T. E. Thorpe, principal of the Government laboratory, will be laid before the Select Committee on the Ventilation of the House and I propose that further experiments shall be made in order to discover the cause of the presence of so many microbes with a view to taking suitable measures of improvement. I will consider the hon. Member's suggestion as to other Government buildings, but the Central Criminal Court is not in any way under my control.

Proposed Meat Inspection in Glasgow.

MR. COHAN asked the Lord Advocate whether he was aware that the municipal corporation of Glasgow had under consideration a series of by-laws dealing with the examination of all fresh meat and meat surface-salted only; that certain fixed stations were to be appointed for this purpose with the object, so far as pork was concerned, of ascertaining whether it was infected with trichinæ; whether he was aware that quantities of Irish pork, amounting to about 100 tons weekly, were imported into Glasgow and that there was no case on record of Irish pork being so infected; and whether, in view of the effect that these by-laws, if passed in their present form, would have on the Irish pork trade with Glasgow, he would see that they contained a provision exempting Irish pork from their operation before they were confirmed by the Secretary for Scotland.—THE LORD ADVOCATE replied: The Secretary for Scotland is informed that the Corporation of Glasgow has for some time past had under consideration the question of making by-laws for the inspection of meat under the provisions of Section 33 of the Glasgow Police Amendment Act, 1890, and that it is proposed to appoint fixed stations for the examination of carcasses, meat, and flesh brought into the city, but that it is not intended to make special provision for the inspection of imported pork in the manner suggested. The by-laws if and when they are adopted by the corporation will, however, have to be submitted to the Secretary for Scotland for his sanction in terms of the statute and any representations will be fully considered before the by-laws are confirmed.

MONDAY, APRIL 21ST.

Vaccination of Government Workmen.

Captain NORTON asked the Secretary to the Admiralty whether his attention had been directed to a notice issued on Wednesday last to the workmen employed at the West India Docks Naval Store Depôt to the effect that unless they subjected themselves to revaccination they would be discharged on Saturday week; and, seeing that a number of these men were only temporarily employed by the Government and consequently not entitled to compensation, whether in the event of vaccination incapacitating them for work he would consider the advisability of granting compensation to such men as comply with the order.—MR. ARNOLD FORSTER replied: No such notice as that referred to by the hon. Member has been issued. The men referred to in the question who are in the temporary employment of the Government only were informed that it was desirable they should take advantage of the gratuitous vaccination which was offered and over 70 of them have done so. The Admiralty cannot undertake to grant compensation to such of the men as may be incapacitated through taking this necessary precaution, but permission has been given to place any men who are disabled on light work as far as possible so that they may not lose pay.

Water in Butter: Presumptive Standard Fixed.

MR. HANBURY announced, in reply to a question, that regulations would at once be issued under Section 4 of the Sale of Food and Drugs Act, 1899, declaring that the presence of more than 16 per cent. of water in any sample of butter would raise a presumption that the butter was not genuine. The regulations would come into force on May 15th.

TUESDAY, APRIL 22ND.

The Royal Army Medical Corps.

MR. KEIR HARDIE asked the Secretary of State for War whether the vacant steps in the Royal Army Medical Corps, under Article 362 of the Royal Warrant, had been filled up, and whether it was intended that the officers concerned would have their promotion antedated in view of their having been kept out of pay and allowances for over six months, and whether retired and seconded officers were shown under that grade and their places left vacant contrary to the rule and practice in other corps.—Lord STANLEY (for Mr. Brodrick) replied: The promotions consequent on the vacancies in the rank of surgeon-general and colonel in the Royal Army Medical Corps have been gazetted. The selection of officers for increased pay under Article 362 of the Pay Warrant has been made. These promotions will be antedated. Seconded and retired officers employed are not included in the authorised number of the ranks referred to, though shown therein.

Milk-blended Butter.

MR. O'SHAUGHNESSY asked the President of the Board of Agriculture if he could state whether milk-blended butter came within the terms of the Margarine Act.—MR. HANBURY replied: The question whether the sale of the article called milk-blended butter is not contrary to the provisions of the Margarine Act is now before the law courts on appeal and I cannot anticipate that decision. In any case, the practice of adding water to butter appears to me to be at least as objectionable as that of adding animal fat and should the existing law be insufficient to deal with the practice I shall no doubt have to consider whether fresh legislation is not necessary.

WEDNESDAY, APRIL 23RD.

The Beer Bill.

The House devoted most of its time at this sitting to a debate on the Bill to amend the law relating to the manufacture and sale of beer. The main provision in the measure was that it should not be lawful in making beer to use a less quantity of barley malt than 85 per cent. of the total saccharine-yielding materials employed, the quantity of materials other than barley malt being calculated according to their respective equivalents in malt as fixed for the time being for the purposes of the charge of duty on beer. It also prohibited the use of hop substitutes. The enforcement of these two provisions it proposed should be undertaken by the officers of the Inland Revenue. There was a further clause in the Bill requiring that beer not brewed in the United Kingdom should not be sold otherwise than under some name clearly distinguishing it as imported beer. When the second reading of the Bill had been moved, MR. FLOWER moved as an amendment: "That this House declines to proceed with the consideration of a Bill interfering with freedom in the manufacture of beer in this country which whilst it imposes upon the scientific development of British brewing industries arbitrary restrictions that cannot be enforced upon foreign competitors, in no way provides safeguards for the public health or secures for consumers a guarantee as to the purity of the materials employed."—DR. FARQUHARSON spoke of the Bill as contrary to common sense and retrograde.—SIR MICHAEL FOSTER also condemned the Bill. He said that it afforded a standard, not for beer, but for the materials of beer, and as such it fell short of the requirements of the case because with the same materials and various treatment a brewer might on the one hand make good beer and on the other bad. The question for the House to consider was whether the processes which the Bill tried to stop had resulted in the production of bad beer and he submitted that they had not. He ventured to say that the beer which was produced by the methods against which this Bill was directed was good beer and might be, and very often was, better beer than that produced by barley malt alone. The beer involved was the light and bright beer which in recent years had come so much into use in this country. The production of this beer depended upon certain processes taking place during brewing. Successful brewing consisted in maintaining a balance and due proportion between the two great constituents of the malt, the nitrogenous and the starchy, and

that not only because the nitrogenous matters gave the flavour and the starchy the alcohol, but because in the exceedingly complex processes by which the malt was converted into beer, the steps of these processes depended upon this relation. If there was not a proper quantity of nitrogenous substances in relation to starchy substances the beer produced was bad beer. There could be no doubt that in ordinary English-grown barley the relation of the nitrogenous substances to the starchy substances was not that which was the proper relation for the production of really good light beer. That was the fundamental matter of the whole business. He did not speak of first-class selected English barley but of ordinary English barley and he said that it could not be used alone for the production of the light and bright beers now in the market. Brewers must either use a considerable quantity of foreign barley which differed in constitution in many ways from English barley or else sugar or saccharine-yielding material. If they used the latter they must use more than 15 per cent.; that was the experience of the most skilful men occupied in producing these light beers. Therefore if this Bill became law they would be doing a serious injury to the English farmer and interfering with the work of the brewers.

The result of the debate was that Mr. FLOWER's amendment was carried by 212 against 140 votes and the Bill was consequently rejected.

ROYAL COMMISSION ON ARSENICAL POISONING.

THE Royal Commission on Arsenical Poisoning held a meeting for the examination of witnesses on April 17th in the Westminster Palace Hotel, Victoria-street. In the absence of Lord Kelvin (the chairman), who is at present in America, the chair was taken by Sir William Hart-Dyke, M.P., and the other Commissioners present were Sir William Church, Professor Thorpe, and Dr. B. A. Whitelegge, and Dr. G. S. Buchanan, of the Local Government Board, secretary of the Commission.

Mr. J. F. WOODYATT, chief medical officer of the Halifax Union Poor-law Hospital, was the first witness and in reply to the Chairman said that about 18 months ago they had several cases of chronic arsenical poisoning at the old workhouse infirmary in Halifax. He saw the cases and so also did several medical men, including the medical officer of health of Halifax. No one had any doubt that they were arsenical cases and they were reported to the board of guardians. As to the recent cases, there were nine of them reported from the Halifax Union Poor-law Hospital. He had intimate knowledge of all these cases and, in fact, all except three were under his care. In regard to one or two of them there was a difference of medical opinion. The hospital was opened on Oct 8th, 1901, and he had with him the bed tickets of the nine cases. Case No. 4 died under four days. The man was a hawker. When brought in he was in a very filthy condition. Witness did not consider that the pigmentation which he was supposed to have was arsenical. The skin was very dirty and had scabby sores, but he was told that the man had been in the habit of sleeping in outhouses for many years. He did not think that the symptoms justified a diagnosis of arsenical poisoning. The case of Weyland was that of an old and feeble man who, in the opinion of witness, died from pernicious anæmia. He was unable to get a post-mortem examination. He signed the certificate as "pernicious anæmia," and when he did so he had no reason to suspect that it was a case of arsenical poisoning. Prior to the Manchester outbreak he had no reason to suspect arsenic in beer, but the Manchester outbreak called his attention to it. He first suspected that patients were suffering from arsenical poisoning in the old workhouse infirmary at Halifax late in 1900.

By Sir WILLIAM CHURCH: He was the responsible medical officer appointed by the Board of Guardians and approved by the Local Government Board. He was responsible for everything in the institution. His definite duties were not drawn up. It was a new appointment and the guardians had hesitated to define the duties very definitely. He was a medical practitioner in the town, but rarely was there a day when he did not visit the hospital, and some days he visited it twice. He had two assistants, but he was responsible for all that took place in the hospital. He invariably saw all the patients who were admitted. Very often he diagnosed them, and if they had been diagnosed before he saw them he confirmed the diagnosis or otherwise. He attended the committee meetings once a week, but he had no clerical duties. Sometimes he made the post-mortem examinations and sometimes he merely attended them. Prior to the death of Weyland there had been inquests at which there was disclosed a difference of opinion between him and the house surgeon. In the case of McNulty witness considered that the pigmentation was due to dirt. He had examined the case very carefully both in life and in the post-mortem room. He did not think that the feet were more scaly than one usually found in tramps and people of that class. He did not notice puffiness in the face or running from the eyes. In the post-mortem examination of the liver arsenic was found. He did not exclude the possibility of arsenic having played a part in causing the man's death. He gave his opinion before there had been any chemical examination and from clinical investigation. At the post-mortem examination he saw the tubes and their condition convinced him that the man had been suffering for many years from bronchitis. He would not say that the man had not been drinking beer which contained arsenic, but the symptoms which he had seen in cases of arsenical poisoning were not present in this case. He was not surprised that arsenic had been found in his tissues because the man was a heavy beer-drinker. The analyst said that there was not more than $\frac{1}{150}$th of a grain of arsenic in the tissues he examined. He had no doubt that the case of Thomas Lee was one of arsenical poisoning. The man had the most marked pigmentation he had seen. He died from acute pneumonia, but to what extent death was due to arsenic he could not say. The man had suffered from several diseases and was in a very bad condition when he came to the hospital. There had been a good deal of difference of opinion with regard to the case of Weyland. The opinion of witness differed from that of the house surgeon. Witness examined the case carefully and formed the opinion that the man had no pigmentation, that his reflexes were present, and that he had no drop ankle. The only symptoms that presented themselves were anæmic. There was nothing about the man's colour except extreme pallor. There had been a difference of opinion at certain inquests and consequently he thought it would be a good thing to call in independent testimony. In this particular case the house surgeon thought that the man was dying from arsenical poisoning. Accordingly, the opinion of Dr. Mantle was taken and he bore out the view of witness that it was a case of pernicious anæmia. Dr. Mantle was called in at the request of witness who reported to the coroner his opinion. He did not think it was a proper thing that the differences of medical men should be exposed at a public inquest. It was to avoid this that he had called in Dr. Mantle. The fee of Dr. Mantle was paid by the secretary of the Brewers' Association. He submitted the evidence to the coroner and left him to decide whether there ought to be an inquest. The opinion of witness was that there had been arsenical poisoning in Halifax only in those cases that did not die. He did not know upon what grounds Dr. Mantle came to the conclusion that the man was suffering from pernicious anæmia; Dr. Mantle did not examine the blood. Witness told Dr. Mantle everything he knew about the man, including that he was 65 years of age. If the case had been certified by the house surgeon as one of arsenical poisoning there would have been an inquest and witness would have had to give his opinion. Witness knew that the house surgeon differed from him and he wished to avoid the difference of opinion being exposed at a public inquiry; that was his only object in calling in Dr. Mantle. He selected Dr. Mantle because he was a physician and an impartial authority.

By Dr. WHITELEGGE: Dr. Mantle formed the opinion that pernicious anæmia was the cause of death although witness had told him that arsenic had been found in the urine. The man was near his end when Dr. Mantle saw him and it was with a view to a possible inquest that Dr. Mantle was called in. He had been quite open in this matter. He had mentioned to the chairman of the board of guardians that they had in the hospital some arsenical cases and he had also mentioned the cases to medical men in the town and district. On the first Tuesday in February he read a paper on arsenical poisoning to the Halifax Medical Society.

By the CHAIRMAN: He would explain the chief points that had occurred to him in connexion with the cases. The first point was the fewness of their number. The poor-law hospital drew patients from a population of 200,000 and there were only nine cases, taking the well-marked with the doubtful cases. Another point was the absence of acute poisoning symptoms, such as vomiting, diarrhœa, running eyes, and other symptoms found in the Manchester cases. The chronic nature of the cases suggested to one the long-continued use of slightly contaminated beer which would also account for the fewness of the cases. The persons attacked were a class of people badly fed and badly clothed, who often slept in the open air, and people whose organs had commenced to degenerate from disease. He had carefully examined heavy beer-drinkers, men who had told him that they drank from 10 to 30 pints per day, and he found in these men no signs of arsenical poisoning except that one man had loss of reflexes. Most of the beers examined had given traces of arsenic. Therefore, in the case of heavy drinkers arsenic was found in the urine.

Mr. WILLIAM THOMSON, analytical chemist, Manchester, said that during the past 18 months he had examined very many samples of beer, and with the severe test he employed he had only found two samples which were free from arsenic. One result of the Manchester scare had been that anthracite was now very much used, but the opinion of witness was that means could and should be devised to prevent the fumes of the fuel reaching the malt. This, he believed, was the only way to get rid of all trace of arsenic.

Mr. THOMAS FAIRLEY, public analyst (Leeds), said that during the last 18 months he had examined a large number of samples of malt and beer. In the case of the former the largest proportion of arsenic was about one-twentieth of a grain of arsenic trioxide per pound and of the latter about one-sixth of a grain of arsenic trioxide per gallon. The arsenic in malt was generally due to the fuel used in the malt kilns, especially to gas coke made from the commoner gas coals. In the dust deposited on the floors and walls of malt kilns he had found arsenic up to 1 per cent. of the weight of the dust. It was therefore necessary not only to use pure fuel but to see that all dust, &c., charged with arsenic was removed. It was difficult to obtain ordinary glass free from arsenic. He had analysed a number of samples of glass and so far had found none arsenic free. The black dust deposited in large towns always contained more or less soot and therefore a certain proportion of arsenic. During 1901 he obtained from farmers samples of phosphate manures used by them, also of the soils to which these manures were applied and of the grain crops grown on these soils. He was able to detect and to estimate the arsenic in the manures and in the soils but so far he had not found arsenic in the crops.

The Commission then adjourned.

ERRATUM.—Dr. Neech writes to us as follows concerning our report of his evidence as given in our issue of April 19th, p. 1150:—"With regard to the analyses after removal of husk. The amounts stated were found in the malt after the removal of the husk, hence some arsenic penetrates the interior of the malt grains, though it is chiefly contained in the husk. The word 'tongues' near the end of your report of my evidence should be *culms*."

BOOKS, ETC., RECEIVED.

ADLARD AND SON, 20, Hanover-square, W.

King's College Hospital Reports. Volume vii. (October 1st, 1899—December 31st, 1900). Edited by Norman Dalton, M.D., F.R.C.P., Albert Carless, M.S., F.R.C.S., John Phillips, M.A., M.D., F.R.C.P., and W. D. Halliburton, M.D., F.R.S. Price 7s. 6d.

ALLEN, GEORGE, 156, Charing-cross-road, W.C.

The Path to Rome. By H. Belloc, author of "Danton," "Robespierre," "Paris," &c. Price 7s. 6d. net.

The Living Rulers of Mankind. By the Rev. H. N. Hutchinson, B.A., F.G.S., F.R.G.S. Vol. i., with 245 illustrations and three coloured pictures. Price 7s. 6d.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Traité de Médecine et de Thérapeutique. Publié sous la direction de MM. P. Brouardel, Doyen honoraire, Professeur à la Faculté de Médecine de Paris, Membre de l'Institut, et A. Gilbert, Professeur de Thérapeutique à la Faculté de Médecine de Paris. Tome IX.: Maladies du Cerveau, de l'Isthme, de l'Encéphale, des Méninges Encéphaliques, de la Moelle Épinière, et des Méninges Spinales. Price 12 francs.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent-garden, W.C.

The Method of Cuignet or Retinoscopy: a Thesis for the Degree of M.D. Oxon. By Edwin Harding Lendon, M.A., M.D. Univ. Coll. With an Atlas of Diagrams. Price 10s. 6d. net.

(Medical Monograph Series, No. 6.) The Hair and its Diseases; including Ringworm, Greyness, and Baldness. An Introductory Handbook by David Walsh, M.D. Edin., Physician, Western Skin Hospital, London. Price 2s. 6d.

CASSELL AND COMPANY, LIMITED, London, Paris, New York, and Melbourne.

Manual of Military Ophthalmology. For the Use of Medical Officers of the Home, Indian, and Colonial Services. By M. T. Yarr, F.R.C.S.I., Major, Royal Army Medical Corps.

CHATTO AND WINDUS, 111, St. Martin's-lane, W.C.

An Industrious Chevalier. By S. Squire Sprigge. Price 6s.

CHURCHILL, J. & A., 7, Great Marlborough-street, W.

The Life of Saint Luke. By Edward Clapton, M.D., F.C.C.P., late Physician to St. Thomas's Hospital. Price 1s. 6d. net.

COLLINGRIDGE, W. H. & L., *City Press* Office, Aldersgate-street, E.C.

The City of London Directory for 1902. Thirty-second annual edition. Price not stated.

CROSBY LOCKWOOD AND SON, 7, Stationers' Hall-court, Ludgate hill, E.C.

The Health Officer's Pocket-book: a Guide to Sanitary Practice and Law for Medical Officers of Health, Sanitary Inspectors, Members of Sanitary Authorities, &c. By Edward F. Willoughby, M.D. Lond., D.P.H. Lond. and Camb. Second edition, revised and enlarged. Price 10s. 6d. net.

F. A. DAVIS COMPANY, 1914-16, Cherry-street, Philadelphia.

Genito-Urinary Diseases and Syphilis. By Henry H. Morton, M.D., Clinical Professor of Genito-Urinary Diseases in the Long Island Cottage Hospital. Price, extra cloth, $3 net delivered.

GREEN, WILLIAM, AND SONS, St. Giles-street, Edinburgh.

Encyclopædia Medica. Under the general editorship of Chalmers Watson, M.B., F.R.C.P.E. Vol. x. Pregnancy to Scarlet Fever. Price not stated.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Handbuch der Krankenversorgung und Krankenpflege. Herausgegeben von Dr. Georg Liebe, Dr. Paul Jacobsohn, Professor Dr. George Meyer. Zweiter Band. Erste Abtheilung. Price 26 marks.

JOHNSON, R. BRIMLEY, 8, York-buildings, Adelphi, W.C.

Applied Religion. By W. Winslow Hall. Price 3s. 6d. net.

Buller's Campaign with the Natal Field Force of 1900. By E. Blake Knox, B.A., M.D., Lieutenant, Royal Army Medical Corps. Price 10s. 6d. net.

KIMPTON, HENRY, 13, Furnival-street, Holborn, E.C.

Essentials of Obstetrics. By Charles Jewett, A.M., M.D., Sc.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital, and Obstetrician and Gynecologist to the Hospital; assisted by Harold F. Jewett, M.D. Second edition. Price 10s. 6d. net.

Venereal Diseases: a Manual for Students and Practitioners. By James R. Hayden, M.D., Chief of Clinic and Instructor in Venereal and Genito-Urinary Diseases at the College of Physicians and Surgeons (Columbia University), New York. Third and revised edition. Price 7s. 6d. net.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, E.C.

Tommy Cornstalk. Being some account of the less notable features of the South African War from the point of view of the Australian ranks. By J. H. M. Abbott, late Corporal, First Australian Horse. Price 5s. net.

Liverpool School of Tropical Medicine. Memoir I.: Malarial Fever; its Cause, Prevention, and Treatment. Containing full details for the use of travellers, sportsmen, soldiers, and residents in malarious places. By Ronald Ross, F.R.C.S., D.P.H., F.R.S. Ninth edition, revised and enlarged. Published for the University Press of Liverpool. Price 2s. 6d.

The Calendar for the Year 1902 of the Royal University of Ireland. Price not stated.

Motors and Motor-driving. By Alfred C. Harmsworth and Other Writers. Price 9s. net.

MURRAY, JOHN, Albemarle-street, W.

Charles Darwin: His Life told in an Autobiographical Chapter and in a Selected Series of his Published Letters. Edited by his son, Francis Darwin, Fellow of Christ's College, Cambridge. New edition. Price 2s. 6d. net.

SANITARY PUBLISHING CO., Limited, 5, Fetter-lane, E.C.

The Prevention of Infection in Public Vehicles. By Alfred Greenwood, M.D., Ch.B., D.P.H., L.R.C.P., L.R.C.S., Medical Officer of Health, Crewe. Price 1s. net.

WARNE, FREDERICK, AND CO., Limited, London and New York.

The Motor-car: an Elementary Handbook on the Nature, Use, and Management. By Sir Henry Thompson, Bart., F.R.C.S., M.B. Lond., &c. Price 2s. 6d.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ASHDOWN, G. W., M.D. Edin., has been appointed Medical Officer of the Belper Union.

BARNETT, L. E., M.B. Edin., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Dunedin Hospital, New Zealand.

BATCHELOR, F. C., M.D. Durh., has been appointed Physician for Diseases of Women to the Dunedin Hospital, New Zealand.

BOSTOCK, A. S., M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health to the Westhampnett Rural District Council.

CARLESS, ALBERT, M.B., M.S. Lond., F.R.C.S., has been appointed Consulting Surgeon to St. John's Hospital, Twickenham, and Honorary Consulting Operative Surgeon to the Ealing Cottage Hospital.

EMRYS-ROBERTS, E., M.B., Ch.B. Vict., has been appointed Assistant Medical Officer to Mill-road Infirmary, Liverpool.

EVANS, WILLIAM, F.R.C.S. Edin., L.R.C.P. Lond., has been appointed Physician for Skin Diseases to the Dunedin Hospital, New Zealand.

FERGUSON, H. LINDO, M.D. (T.C.D.), has been appointed Ophthalmic Surgeon to the Dunedin Hospital, New Zealand.

GIMBLETT, W. H., M.D. Durh., has been re-appointed Medical Officer of Health of the Buckhurst Hill Urban District, Essex.

HARPER, ALEXANDER, M.D. Durh., M.R.C.S., has been appointed Medical Officer to the Princess Alice Memorial Hospital, Eastbourne.

HORDERN, J. B., L.D.S. R.C.S., has been appointed Honorary Dental Surgeon to the Leeds General Infirmary, vice Mr. T. Carter.

LAIRD, A. J., M.D. Glasg., has been appointed Medical Officer of Health of the Borough of Crewe.

LARWILL, JOHN, L.R.C.P. & S. Edin., has been appointed Medical Officer at Boonah, Queensland.

NASH, J. T. C., M.D., D.P.H., Medical Officer of Health, Southend-on-Sea, has been re-appointed Acting Professor of Hygiene at King's College, London, during the absence of Professor Simpson on special duty.

RAMSDEN, HERBERT, M.B. Lond., has been appointed Certifying Surgeon under the Factory Acts for the Saddleworth District of the West Riding of Yorkshire.

RIDEN, ALONZO G., M.D. Lond., has been appointed Surgeon to the Royal Albert Hospital, Devonport, vice Dr. J. N. Leah, resigned.

ROBERTS, W. S., M.R.C.S., has been appointed Pathologist to the Dunedin Hospital, New Zealand.

ROBSON, R. B., M.B. Durh., has been appointed Medical Officer to the Urban District Council of Alnwick.

ROBINSON, FREDERICK, L.R.C.P. & S. Irel., has been appointed Police Surgeon for the County Borough of Blackburn.

SEABROOK, T. E. FRASER, M.D. St. And., has been appointed Quarantine Health Officer for South Australia.

SINCLAIR, W. J. H., M.B., C.M. Aberd., has been appointed Medical Officer at the general prison, Barlinnie, by Glasgow, vice Dr. J. Maxtone Thom.

STEELE, S. T., M.R.C.S., L.R.C.P. Edin., has been re-appointed Medical Officer of Health to the Morley Corporation, Leeds.

THOM, J. MAXTONE, M.B., M.S. Edin., has been appointed Medical Superintendent of Glasgow Royal Infirmary.

WILLEY, FLORENCE E., M.B., B.S., B.Sc. Lond., has been appointed Pathologist to the Royal Free Hospital, Gray's-inn-road, King's Cross.

WILLIAMSON, R. T., M.D., F.R.C.P. Lond., has been elected an Honorary Assistant Physician to the Royal Infirmary, Manchester.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARBADOS GENERAL HOSPITAL.—Junior Resident Surgeon. Salary £200 per annum, with unfurnished house.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with apartments, board, and attendance.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES, John Bright-street, Birmingham.—Surgical Assistant. Honorarium at rate of 50 guineas per annum.

BRADFORD ROYAL INFIRMARY.—Junior House Surgeon, unmarried. Salary £50 per annum, with board and residence.

BRENTFORD UNION WORKHOUSE AND SCHOOLS, Isleworth.—Assistant Medical Superintendent, unmarried. Salary £120 per annum, with apartments, rations, washing, &c.

BUCKINGHAMSHIRE ROYAL HOSPITAL, Aylesbury.—Resident Surgeon, unmarried. Salary £80, increasing to £100, with board and apartments.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Second Assistant Physician.

CANCER HOSPITAL, Fulham-road, S.W.—Junior House Surgeon. Salary at rate of £70 per annum, with board and residence.

CARMARTHENSHIRE INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, all found.

CENTRAL LONDON SICK ASYLUMS at Cleveland-street or Hendon.—First Assistant Medical Officer. Salary £120 per annum, with board and residence.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Registrar. Honorarium of 20 guineas per annum.

CORNWALL ROYAL INFIRMARY.—House Surgeon (unmarried). Salary £100, increasing, with board and apartments.

CROOKSBURY SANATORIUM FOR OPEN-AIR TREATMENT.—Assistant Medical Officer. Salary £100 per annum.

DUDLEY, THE GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £40 per annum, with residence, board, and washing.

DURHAM COUNTY ASYLUM.—Junior Assistant Medical Officer wanted. Salary £150, rising to £180 a year, with apartments, board, laundry, and attendance.

ESSEX COUNTY ASYLUM, Brentwood.—Locum Tenens. Salary 4 guineas weekly with board.

FISHERTON ASYLUM.—Assistant Medical Officer. Salary £150 per annum.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £80 per annum, with board and lodging.

HACKNEY UNION.—Medical Officer. Salary £80 per annum, with fees.

HOXTON HOUSE ASYLUM, Hoxton-street, London, N.—Clinical Assistant. Salary £80 per annum, with board, lodging, and washing.

KINGS NORTON AND NORTHFIELD URBAN DISTRICT COUNCIL AND INFECTIOUS DISEASES HOSPITAL.—Medical Officer of Health and Medical Superintendent. Combined salary £500 per annum.

LIVERPOOL DAVID LEWIS NORTHERN HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with residence and maintenance.

LIVERPOOL STANLEY HOSPITAL.—Third House Surgeon. Salary £70 per annum, with board, residence, and washing.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer. Salary £80 per annum, with board, attendance, and washing, and prospect of re-election as Senior (salary £100).

NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Honorarium £20, with board, lodging, and washing.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer. Also Assistant Resident Medical Officer, each for six months. Salary at rate of £50 per annum, with board, residence, and washing.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician, also House Surgeon, both for six months. Salary at rate of 50 guineas a year, with board and residence.

POPLAR AND STEPNEY SICK ASYLUM, Bromley, E.—Second Assistant Medical Officer. Salary £100 per year, with rations, apartments, and washing.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £70 per annum, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £80 per annum, with residence, board, and laundry.

SUFFOLK GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, lodging, and washing.

TAUNTON AND SOMERSET HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, lodging, and laundry.

ST. GEORGE'S HOSPITAL, S.W.—Assistant Dental Surgeon.

ST. MARY'S HOSPITAL, Paddington.—Surgeon-in-Charge of Out-patients.

UNIVERSITY COLLEGE HOSPITAL.—Radiographer and Photographer. Salary £50.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Second House Surgeon, unmarried. Salary £80 a year, with board, residence, and laundry.

WIGAN INFIRMARY.—Junior House Surgeon. Salary £80 per year, with apartments and rations.

WORCESTER GENERAL INFIRMARY.—House Physician, unmarried. Salary £70 per annum, with board, residence, and washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon, under the Factory Acts, at Edgworth, in the county of Lancaster.

Births, Marriages, and Deaths.

BIRTHS.

ANDREWS.—On April 15th, at Martindale, Tonbridge, Kent, the wife of H. Arthur Andrews, M.R.C.S., L.R.C.P., of a son.

BIDDLE.—On April 12th, at Broadstairs, the wife of Henry G. Biddle, M.R.C.S., L.R.C.P. Lond., of a daughter.

CARD.—On April 15th, at Muswell-rise, N., the wife of Alfred H. Card, M.R.C.S., L.R.C.P. Lond., of a daughter.

MARRIAGES.

JAMES—BURNABY.—On April 17th, at St. Stephen's Church, Paddington, Arthur James, M.D. Brux., D.P.H., to Gertrude Hilda, daughter of the Rev. Henry Fowke Burnaby.

WALKER—SECKER.—On April 24th, at All Saints', Daresbury, Cheshire, by the Rev. H. Milnes Walker, brother of the bridegroom, assisted by the Rev. F. Clifton Smith, vicar, and the Rev. E. C. E. Carleton, Henry Secker Walker, F.R.C.S., of Leeds, to Elaine Mary Secker, only daughter of the late Rev. T. J. Secker, sometime vicar of St. Peter's, Bishop Wearmouth, and niece of John White, Esq., of Moore Hall, Cheshire.

DEATHS.

ACKERLEY.—At Naples, on April 19th, Eliza Helen (Lillie), wife of Richard Ackerley, M.B., of Surbiton.

COLEMAN.—On April 18th, at his residence, Salop-street, Wolverhampton, John Major Coleman, M.D., in his 71st year.

WATSON.—On April 17th, at West Derby, Liverpool, Dr. Alexander Watson, Inspector-General R.N.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE "Y" FUND.

SURGEON-GENERAL H. S. MUIR begs to acknowledge, with thanks, donations towards the "Y" Fund from Sir William S. Church and Lady Church, Mr. Howse, the Director-General of the Army Medical Service, Surgeon-General W. R. Hooper, C.S.I., Lady Bective, Lady Russell Reynolds (who also sends an anonymous contribution), Mrs. de Pass, Mrs. Giraud Cooke, Surgeon-General A. H. Keogh, C.B., Lieutenant-Colonel A. Clarke, Lieutenant-Colonel H. E. Drake-Brockman, the Proprietors of THE LANCET, Dr. John Anderson, C.I.E., Sir Felix Semon (who also sends a contribution from "A Well-wisher"), Dr. P. H. Pye Smith, Dr. H. G. Turney, Dr. H. Scharlieb, Dr. H. H. Tooth, Mr. C. Stonham, Mr. Vesey Holt, and Mr. Thomas Wakley, Jun.

It may be explained that this is in response to an appeal made privately to members of the profession for benevolent aid in a distressing case which has been described in a letter sent to a limited number of medical men (who would help the cause by kindly "handing on" to *confrères*). Should any reader desire further particulars with a view to expressing *practical sympathy*, a copy of the letter will be forwarded on application to Surgeon-General Muir, 26, Kensington-gardens-terrace, Hyde Park, London, W.

THE PREHISTORIC REMAINS RECENTLY ACQUIRED BY THE BRITISH MUSEUM.

To the Editors of THE LANCET.

SIRS,—The catalogue of the Egyptian room describes the first of these remains that is exhibited to the public as "a man of a very remote time before the rule of the historic kings of Egypt." The dried body is shown just as it was found lying on its left side, with its thighs doubled up under it, in an exact model of the grave, with all its neolithic flint instruments, &c., *in situ*. The head suggests rather a small man. The features, as far as one can see them, are unlike those of the ordinary type of the Egyptian mummy. A tuft of hair on the scalp seems to be of fine woolly texture and a depression in the right parietal bone looks like a wound from a blunt instrument that has healed up. Besides this one there are three others that are not yet exhibited publicly; these I was kindly allowed to examine. Two are apparently the bodies of old men and one is that of a woman about 30 or 40 years of age. These remains are more imperfect than those of the other body, but the three skulls and the teeth are more visible and from these I estimated their ages; the pelvis of the woman indicated her sex. The heads of the men appear to me to be small but that of the woman excessively so, even taking into account her diminutive size. The teeth of all three seem to be in perfect condition, with this peculiarity, that they are unusually large, especially the canines, which look ferociously prominent. The teeth of Egyptians wear away faster than is usual by the action of the sand masticated in the food. With a magnifying glass the enamel can be seen all scored and scratched instead of being polished by use. Another peculiarity of all is the strong development of the bones of the legs, which indicates a life of great activity. The state of the teeth in some of the mummies is a great contrast to the above. In one near the prehistoric man the front teeth are worn and twisted in an extraordinary manner; the molars are coated with tartar, because decay and suppuration caused the loss of several of them and all necessary mastication, &c., had to be done with the front teeth, thus destroying them by excessive use. I make this out by the presence of tartar on all the double teeth left, which proves that he did not use them for years before his death. This is also interesting, as it shows us that these evils are not altogether due to modern civilisation, as one so often hears. There is a curious thing like a round plug, with a short handle about three-quarters of an inch, in the right orbit of the female mummy; it is beautifully made of some woven material of about the size of the eyeball. I think it must have been used during life to fill up the cavity due to the loss of the eye. If it was merely intended to fill the space after death there would have been one to each orbit and they would have been less carefully made than this one is.

The examination is necessarily imperfect because of the impossibility of taking exact measurements, as the remains cannot be got at in the glass cases.

I am, Sirs, yours faithfully,

N. STEVENSON, M.R.C.S. Eng., L.D.S.

Wimpole-street, W., April 8th, 1902.

SANDGATE AND ITS SANITARY STATE.

SOME time ago Miss Florence Warden (Mrs. James) laid lovers of an exciting sensational story under a great obligation by writing "The House on the Marsh." She is now endeavouring to lay Sandgate under an obligation by trying her best to get the authorities of that popular seaside resort to improve its sanitary status and more especially to pay some attention to the so-called convalescent homes run by the notorious John James Jones. The Sandgate health authorities, however, so far refuse to move and the matter is being ventilated both in *Truth* and in *The Public Health Engineer*. What has the medical officer of health of Sandgate to say in the matter?

ORGANO-THERAPY.

To the Editors of THE LANCET.

SIRS,—The perusal of the Hunterian Lecture in THE LANCET of April 19th, p. 1089, brought to mind in association with the section referring to the exhibition of glandular juices the ancient dictum of Nicander of Colophon in his poem "Theriaca" (line 566) "ες ποτὸν, ἢ παραλὴν, ἢ καστορος ὅλοον ὀρχιν." It has been suggested, and even asserted, that the substance referred to was castoreum and not the gland, but it is surely absurd to suppose that the two substances could be confounded—the one an amorphous mass and the other evidently highly organised.

I am, Sirs, yours faithfully,

GEO. SHERRINGTON-MORRIS.

DISGUSTING ADVERTISEMENTS.

A CORRESPONDENT has sent to us the *Lincolnshire Chronicle* of April 11th, in one column of which we find the following advertisements:—

WOMAN'S UNFAILING FRIEND:

TOWLE'S PENNYROYAL and STEEL PILLS FOR FEMALES. Quickly Correct all Irregularities, Remove all Obstructions, and Relieve the Distressing Symptoms so prevalent with the sex. Boxes 1/1½, 2/9 (contains three times the quantity), and large size 4/6, of all chemists. Sent anywhere on receipt of 15, 34 or 55 stamps, by E. T. TOWLE and Co., 66, Long Row, Nottingham.

Beware of Imitations, injurious and worthless.

A WORD TO LADIES.

Send two stamps for our new and original Illustrated Booklet, containing plain and practical advice how Irregularities, Suppressions, &c., may be prevented or removed by a simple means in a few hours. Recommended by eminent Physicians, and thousands of Ladies, as being the only Genuine Remedy. This is not a quack medicine. Established 30 years.—LESLIE MARTYN, Ltd., Chemists, 34, Dalston-lane, London.

FOR MORE THAN 20 YEARS
DR. DAVIS'S FAMOUS PILLS
HAVE HAD A
WORLD-WIDE REPUTATION AS A BOON TO WOMANKIND.

They are universally known as the Best Remedy for Anæmia, Debility, Depression, Weakness, and other ailments. Of Chemists and Stores everywhere.

Boxes 9½d., 1/1½, 2/9, 4/6, and 11/-, or under cover from the Proprietor,

309, Portobello-road, Notting-hill, London, W.

MARRIED LADIES' Correspondent.—Send stamped address for particulars to Mrs. E. WILSON, Elder Grove, Sheffield.

We have before now demonstrated in THE LANCET—and our view has been practically adopted by all decent papers—that advertisements of drugs for females purporting to "remove obstructions" or "prevent suppressions" are simply invitations to attempts at abortion. Both "Dr." Davis and his pills have a reputation among respectable persons that is as malodorous as copaiba. We omit an advertisement of a substitute for cubebs, but the following advertisement of a "cancer cure" is very appropriately included in the column.

CANCER CURE.
SAFE. CERTAIN.

As there is so much suffering from this dire disease I wish to make it known that I can cure either Cancer or Tumour without cutting, unless the disorder has reached the final stage. No one need despair. No expensive Quackery. Been discovered a century. Numerous Testimonials. Consultations on Fridays from 11 to 2, at No. 16, SINCIL-STREET, Lincoln, or appointments by letter,—Address, Mrs. SINGLETON, Saxilby, Lincoln.

The proprietors of the *Lincolnshire Chronicle* cannot be congratulated upon the money which they have received for the dissemination of this mendacious filth.

WANTED A HOME.

To the Editors of THE LANCET.

SIRS,—Would any of your readers inform me whether there is any hospital or home where a rheumatic patient in poor circumstances could be taken for treatment? She is not able to dress herself but can feed herself.

I am, Sirs, yours faithfully,

Hildegard House, Whitby, Yorks, April 14th, 1902. M.D.

TO MEDICAL FREEMASONS.

THE election at the Royal Masonic Benevolent Institution of 13 widows of Freemasons and of 20 aged Freemasons as annuitants will take place on Friday, May 16th. Our readers may remember that we published an appeal recently on behalf of Arthur Somers Ivens, M.R.C.S. Eng., L.R.C.P. Edin., the only medical man on the list of 48 candidates. The only medical case among the 58 widows of Freemasons is No. 4, that of Mrs. Eliza Emma Dickinson, who is making her ninth application. We trust that those of our readers who possess votes which are not already engaged or promised will see their way to support these medical candidates.

PROPOSED MEMORIAL TO THE LATE SURGEON-GENERAL W. NASH, A.M.S.

THE following subscriptions have been received since the last notification:—

	£	s.	d.
"H. A. M."	1	1	0
Lieutenant J. Crawford Kennedy, R.A.M.C. ...	0	2	6
Captain J. H. Power, R.A.M.C.	1	1	0
Colonel J. L. Notter, R.A.M.C.	1	0	0
Lieutenant-Colonel T. B. Moffitt, R.A.M.C. ...	1	0	0
Lieutenant-Colonel G. T. Langridge, R.A.M.C.	1	1	0
Major J. J. C. Donnet, R.A.M.C.	1	0	0
Surgeon-General A. F. Preston, K.H.P., A.M.S.	1	1	0
Major E. C. Freeman, R.A.M.C.	0	10	6
Lieutenant-Colonel J. Lees Hall, R.A.M.C.	1	1	0
Colonel Sylvester	1	1	0
Major A. A. Sutton, D.S.O., R.A.M.C. ...	0	10	0
Major J. M. Nicolls, R.A.M.C.	0	10	0
Major W. T. Swan, R.A.M.C.	0	10	0
Major R. J. Geddes, D.S.O., R.A.M.C. ...	0	5	0
Lieutenant-Colonel W. J. Macnamara, R.A.M.C.	0	10	0
Captain and Quartermaster E. Thowless	0	5	0
Lieutenant and Quartermaster R. Hawkey ...	0	5	0
Lieutenant-Colonel W. L. Chester (second subscription)	1	10	0
Previously acknowledged in THE LANCET	54	9	6
Total	£68	13	6

F. J. F.—The consultant physician, in our opinion, acted rightly. The patient, or the patient's employer, erred in not being candid with the general practitioner about their intention to have a second opinion, but laymen must not be expected to observe the rules of medical etiquette. The patient wished, or deferred to the wish of his employer, to seek the consultant physician's advice. The circumstances of the case would not all be necessarily clear to the consultant, but when he learned that the patient was already under medical care he wrote to the medical attendant. In these difficult cases we do not invariably find consultant physicians ready to recognise the claims to consideration of the general practitioner, but we think that our correspondent has no cause for complaint against the consultant.

X.Y.Z.—Under Section 21 of the Poor-law Board Act, 1847, and Section 14 of the Poor-law Amendment Act, 1834, the Local Government Board has power to make an order for the payment of witnesses who have received a subpœna from one of the board's inspectors—that is, assuming such witnesses have not travelled over 10 miles. The fees vary according to the station in life of the witness, but a professional man, other than an expert, would receive from 15*s.* to 21*s.* per diem. If the distance be over 10 miles special arrangements would have to be made. The precise amount of the fee in each instance is largely determined by the presiding inspector.

B. G.—In the circumstances narrated by our correspondent we do not see anything unfriendly in B being prepared to accept a certain part of A's district if it is offered to him. A clearly cannot do the work himself and the guardians may prefer to appoint B rather than employ an assistant to be procured by A. The choice remains with the guardians, but there is nothing unprofessional in B's candidature.

M.O.H.—We do not think that parish councils ought to consider the medical officer of health of their district at their beck and call; but, on the other hand, we doubt whether our correspondent will be able to exact a fee if he charges one. He should obtain the advice of his sanitary authority on the matter, and if necessary of the Local Government Board.

A Subscriber.—We are quite without information concerning the treatment in question which, to the best of our belief, has never been made public to the medical profession. The treatment is not fully described, so far as we know, in any book. We regret to be of no service.

C. S. W.—1. There is no book on the subject written in the qualified manner suggested by our correspondent. 2. Allbutt's System of Medicine, vol. i., Article on Balneology and Hydrotherapeutics.

X.Y.Z. (2) has a right to the style of his medical degree. He will find the question discussed and summarised in THE LANCET of August 17th, 1895, p. 412.

Paddy is recommended either Jacobson's Operations of Surgery (J. & A. Churchill, 34*s.*) or Treves's Operative Surgery (Cassell, 42*s.*).

Quæsitor should consult his medical adviser.

During the week marked copies of the following newspapers have been received:—*Torquay Times, Western Daily Mercury, Cork Constitution, Manchester Evening News, Yorkshire Post, Sheffield Independent, Wiltshire Mirror, Bradford Observer, Morning Post, Essex Herald, Newcastle Journal, Hereford Mercury, Hartlepool Mail, Brighton Gazette, Kent Examiner, Suffolk Chronicle, Surrey Advertiser, Bristol Mercury, Dublin Express, Darlington Star, Times of India, Penrith Observer, Daily Graphic, Huddersfield Examiner, Sanitary Record, Local Government Chronicle, Hertfordshire Mercury, Burton Chronicle, Dundee Advertiser, West Sussex Gazette, Lincolnshire Advertiser, Barking Advertiser, Bolton Chronicle, Kent Messenger, Middlesbrough Gazette, Birmingham Post, Aberdeen Press, &c.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 24th, 1902.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. in Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
April 18	30·00	E.	...	88	61	46	48	50	Hazy
,, 19	29·86	S.W.	...	116	64	46	52	57	Cloudy
,, 20	29·89	S.	0·03	110	60	50	53	56	Cloudy
,, 21	30·03	S.W.	0·04	102	63	50	52	55	Cloudy
,, 22	29·59	S.	..	77	58	54	53	55	Raining
,, 23	29·76	S.W.	0·04	109	62	47	49	53	Cloudy
,, 24	30·05	S.W.	0·02	107	62	47	50	54	Fine

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

WEDNESDAY (30th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.).

THURSDAY (1st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

FRIDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), City Orthopædic (2.30 P.M.).

SATURDAY (3rd).—Royal Free (9 A.M. and 2 P.M.), London (2 P.M.) Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.), Throat, Golden-square (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (28th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Council Meeting Night. Paper:—Mr. A. H. Tubby: The Quiescent Period in the course of Grave Abdominal Inflammation.—Lieutenant P. S. Lelean, R.A.M.C.: A Series of Cases of Bilharzia (illustrated by lantern and microscopical demonstrations).

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (20, Hanover-square, W.).—7 P.M. Council. 8 P.M. Communication:—Mr. J. G. Turner: A Case of Pyorrhœa Alveolaris leading to Antral Suppuration. Paper:—Mr. K. W. Goadby: A Preliminary Note on the Bacteria found in Pyorrhœa Alveolaris. (Progress Report.)

TUESDAY (29th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Card Specimens will be shown by Mr. W. G. Spencer and Dr. Malcolm. Papers on Endotheliomata occurring in various situations by Dr. Seligman, Mr. R. Johnson and Mr. Lawrence, Dr. Emmanuel, Dr. Rolleston and Dr. Grünbaum, Mr. Shattock, Dr. Corner and Mr. Scott, and Mr. Gask.—Dr. Pernet: Congenital Multiple Sarcomata of the Skin.—Dr. Fawcett: Chyle Cyst of Mesentery.—Mr. W. W. Pitchford: Pancreatic Tumour.

THURSDAY (1st).—RÖNTGEN SOCIETY (20, Hanover-square, W.).—8.30 P.M. Discussion upon the Relation between X Rays and Allied Phenomena in Light and Electricity (opened by Mr. E. Payne).

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—Clinical Evening. Cases will be shown by Mr. G. Hartridge, Mr. H. Grimsdale, Mr. W. A. Frost, Mr. E. T. Collins, Mr. L. V. Cargill, Dr. G. M. Thompson, Mr. W. Lang and Dr. G. M. Thompson, and Dr. A. Bronner.

FRIDAY (2nd).—SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. Blumfeld: Some Points concerning complete Relaxation of the Abdominal Walls under Anæsthetics.—Dr. Flux: The Use of the Open Stopcock.

BRITISH ELECTRO-THERAPEUTIC SOCIETY (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Adjourned Discussion on Dr. Sequeira's paper on the Finsen Treatment of Lupus, Rodent Ulcer, &c.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases, Specimens and Instruments will be shown by Dr. A. Bronner, Dr. W. Downie, Dr. J. Horne, and Dr. Donelan.

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8.45 P.M. Dr. T. C. Meggison: Migraine (Presidential Address). Smoking Concert.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (28th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Galloway: Clinique. (Skin.)

TUESDAY (29th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. S. Taylor: Clinique. (Medical.)

WEDNESDAY (30th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Berry: Clinique. (Surgical.)

THURSDAY (1st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

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